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The Ctenuchidae (Moths) of Trinidad, B. W. I. Part I. Euchromiinae.[1]

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(Plates I-III)

[This paper is one of a series emanating from the tropical Field Station of the New York Zoological Society, at Simla, Arima Valley, Trinidad, British West Indies. This station was founded in 1950 by the Zoological Society's Department of Tropical Research, under the direction of Dr. William Beebe. It comprises 200 acres in the middle of the Northern Range, which includes large stretches of undisturbed government forest reserves. The laboratory of the station is intended for research in tropical ecology and in animal behavior. The altitude of the research area is 500 to 1,800 feet, with an annual rainfall of more than 100 inches.

[For further ecological details of meteorology and biotic zones see "Introduction to the Ecology of the Arima Valley, Trinidad, B.W.I.," William Beebe. (Zoologica, 1952, Vol. 37, No. 13, pp. 157-184).].

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INTRODUCTION

THIS paper concerns the species of moths belonging to the subfamily Euchromiinae that have been reported in the literature or collected by the Department of Tropical Research of the New York Zoological Society at its biological station at Simla, Arima Valley, Trinidad, B.W.I. The subfamily Ctenuchinae will be treated in a subsequent paper which will also include keys to all the genera of Ctenuchidae found in Trinidad, as well as the bibliography.

I have followed Travassos (1935: 437-451) in the selection of the family name for this group of moths. Ctenuchidae has priority over other names in use as follows:

Ctenuchidae, Kirby, 1837.
Syntomidae, Snellen, 1867.
Euchromiidae, Neumoegen & Dyar, 1893.
Amatidae, Jansen, 1917.

While the type genus of Syntomidae, *Syntomis,* has been found to be a junior synonym of *Amata,* the emendation of the XIVth International Congress of Zoology at Copenhagen, 1953, states that a family group taxon based on a synonomized genus is not to be changed (Copenhagen Decisions on Zoological Nomenclature: 36, par. 54 (1) (a), 1953). The Syntominae are limited to the Old World and do not concern us in this paper.

No attempt has been made to make the references under the species complete. References to the original description, pertinent or new synonomy, colored figures, helpful descriptions to the species or a specific reference to Trinidad have been cited, however.

Three publications cited whenever possible are:

Hampson, G. F.: Catalogue of the Lepidoptera Phalaenae, I, Syntomidae, 1898; Supplement I, Amatidae, 1914.

Seitz, A.: Macrolepidoptera of the World, VI, Euchromiidae, 1915 and 1917.

Kaye, W. J. & N. Lamont: A Catalogue of the Trinidad Lepidoptera Heterocera. Mem. Dept. Agric. Trinidad and Tobago, No. 3, 1927.

This paper includes keys to the species of moths found in Trinidad and photographs of the species collected at Simla, Arima Valley, in an attempt to make it useful to biologists working on ctenuchids in Trinidad. Five new species of Euchromiinae are described.

The species of Ctenuchidae of Trinidad are continental rather than Caribbean. Trinidad and the adjacent island of Tobago are geologically part of South America rather than of the West Indies, and the faunistic and floristic character of the two islands is decidedly related to Guiana and Venezuela.

Our own collecting almost without exception has been confined to the Arima Valley in the Northern Range of Trinidad. However, Kaye & Lamont (1924) listed the species known to occur on the island as a whole and Lamont & Callan (1950) added two species to the Euchromiinae. The species reported by these authors are included in this paper. There are extremely few records from the southern part of the island and additional species may be expected when this region has been investigated.

My thanks go to Miss Rosemary Kenedy, who made notes and took photographs of many of the holotypes of the ctenuchid species in the British Museum (Natural History) which aided in the determination of some of the species in question. She also collected the majority of the department's ctenuchid collection. Thanks go also to Dr. William Beebe and Miss Jocelyn Crane for their part in assembling the collection and for advice and criticism.

Euchromiinae

The absence of vein Sc in the hindwing separates the Euchromiinae from other families of Trinidad moths. In this subfamily vein M_2 of the hindwing is rudimentary or absent but often represented by a vein-like line of scales, whereas in the subsequent subfamily, Ctenuchinae, vein M_2 of the hindwing is present. Veins Cu_1 and Cu_2 are stalked or united in the Euchromiinae, but in the Ctenuchinae, with the exception of the *Horama* and related genera, they are widely separated.

Pseudosphex Hubner

This and the following two genera are wasp-like in appearance, with constricted abdomens.

Pseudosphex **kenedyae,** new species
(Pl. I, fig. 1; Pl. II, fig. 1)

Pseudosphex melanogen Beebe, not Dyar, 1955: 32, fig. 6.

Length of forewing 11 mm.

Closely related to *Pseudosphex laticincta* Hampson. *P. kenedyae* differs from *P. laticincta* principally in lacking the dorsal band on the first abdominal segment and on the lateral bullae.

Male.—Antennae bipectinate. Processes on first segment of antennae small but gradually increasing in length to the seventh segment where it reaches a length of .142 mm. The processes are but slightly dilated, pubescent anteriorly and with a bristle at the distal end. Near the distal third of the antennae the pectinate processes decrease in length and resolve into three dentate segments followed by 14 serrate segments. The serrate segments are blackish-brown and the remainder of the antennae reddish-brown.

Palpi concolorous yellow with a fan-shaped tuft of hairs on the basal palpal segment yellow interspersed with black hairs. Front yellow but in rubbed specimens may have a whitish cast. A large black spot on vertex of head surrounded by yellow. Side of head behind eyes yellow with occasional black hairs or scales.

Patagia yellow with a broad black bar behind middle. Tegulae yellow edged with black; broadly edged with black at the costal margin of the forewing where it projects slightly on the subcostal and cubital veins. Mesothorax (scutum) black with two diagonal yellow stripes and a mid-dorsal line of yellow scales broadening caudally. Hind edge of scutum with yellow scales. Metathorax yellow.

Legs yellow. The *inner face of the forecoxae shining white.* The distal edge with a few scattered yellow scales. *Inner face of forefemur shining white* but somewhat variable in width in different lights, with the cephalad edge yellow. Frequently on the outer edge of the distal tip of the femur of the meso- and metathoracic legs a very small patch of shining white scales.

In different lights the yellow color of the thoracic structures may take on an orange-yellow cast.

Forewing hyaline. Costal area, area beyond discal cell, part of discal cell above discal fold and area below vein 2dA fuscus brown. Remainder of wing with scattered setae.

Hindwing hyaline with scattered setae except the costal area above the cell and vein R_s which is fuscus, similar in color to the respective area of the forewing.

Dorsum of first abdominal segment and bullae yellow with the anterior margin finely edged with black. Second abdominal segment(peduncle) translucent yellow. *The subsequent caudal segment with the anterior half tan brown and the posterior half translucent yellow.* The middorsum of this segment may have a slight middorsal line of darker scales. Fourth, fifth and sixth segments of the abdomen with the two-thirds of the cephalad portion of the segment blackish-brown and the caudal third translucent yellow. Seventh abdominal segment dark and yellow area approximately equal. Last segment with only the cephalad quarter of the segment blackish-brown. Terminal tuft of the abdomen yellow.

Ventrum of the abdomen with the anterior part of the valve (peduncle) relatively unscaled, usually gray but sometimes dark brown. Often with scattered occasional yellow scales. Approximately at the point where the caudal lateral edge of the dorsal sclerite of the peduncle segment touches the ventral vein, the valve becomes translucent yellow. The valve is fringed on its caudal edge with white scales approximately a fifth of the length of the yellow part of the valve. Remainder of the ventrum yellow peppered with black scales.

Female similar to the male except wing expanse greater (12 mm.), and the basal and medial part of the antennae prismatic. The last 12 distal antennal segments are slightly serrate, dark grayish-brown in our single female and the three preceding segments light brown and dentate rather than prismatic. The remaining segments of the antennae are warm reddish-brown. The legs are concolorous yellow with no white areas.

Closely related to *P. laticincta* from which it differs by having a concolorous first abdominal segment and bullae whereas in *P. laticincta* the first abdominal segment has a dorsal stripe and the bullae are banded.

Rosemary Kenedy compared part of our series with Hampson's type of *P. laticincta* in the British Museum (Natural History) and noted that in the male of *P. kenedyae* the antennal shaft is darker than the type of *P. laticincta* so that the basal darkening is not so apparent. *P. kenedyae* has a longer and more restricted antennal extremity preceded by a contrasting lighter area and the pectinations slightly longer and not so dilated. The light brown abdominal band on the second segment of *P. kenedyae* is a black band in *P. laticincta* and the same color as the subsequent black abdominal bands. The dark abdominal bands of *P. laticincta* are narrower and extend to slight points behind mid-dorsally, more so than in *P. kenedyae*. In *P. kenedyae* only the fifth and sixth abdominal segments consistently have pronounced black points.

It is also important to note from Miss Kenedy's memoranda that the palpi of *P. laticincta* are similar to *P. kenedyae*. The palpi are yellow with a fan-shaped process from the basal palpal segment with yellow scales interspersed with black scales. In other words, the palpi are not banded in the usual meaning of the term in *P. laticincta*, as the original description would lead one to believe.

P. kenedyae differs from *P. melanogen* Dyar in having more yellow on the thorax and much wider yellow bands on the abdomen. The same considerations are true for *P. deceptans* Zerny which was synonymized under *P. melanogen* by Hampson. Neither *P. melanogen* nor *P. deceptans* are described as having white forecoxae.

For purposes of Trinidad identification, the broad fuscus costal margin of the forewing will separate this species from the species in the following two genera.

I take pleasure in naming this species for Miss Rosemary Kenedy, Research Assistant of the Department of Tropical Research, whose initiative in the use of *Heliotropium* as an attractant for euchromids brought to light this new species.

Material—All of the types were taken at Simla, Arima Valley, Trinidad, on *Heliotropium indicum*. Holotype, male, Catalog No. 5639, 20-II; allotype, female, (5640) 29-IV; 15 paratypes, males, (5641) 14-I, (5642) 15-I, (5643) 20-I, (5644) 28-I, (5645) 10-II, (5646) 20-II, (5647) 22-II, (5648) 23-II, (5649) (5650) (5651) 4-IV, (5652) 29-IV, (5653) 1-V, (5654) 27-XII,(5655) 31-XII.

Disposition of type material.—The Department of Tropical Research, New York Zoological Society, will retain three paratypes, Catalog Nos. 5650, 5651 and 5655. Paratypes with Catalog Nos. 5648 and 5653 are in the British Museum (Natural History) collection and paratypes with Catalog Nos. 5644 and 5652 are in the United States National Museum collections. The holotype, allotype and remaining paratypes are in the American Museum of Natural History, New York.

Pleurosoma Orfila

This and the following genus may be distinguished from the preceding genus, *Pseudosphex*, by vein R_5 of the forewing arising basad of vein R_3.

The genus *Astridia* Kiriakoff, 1948: 267, is an absolute synonym of *Pleurosoma* Orfila, 1935: 178.

Both genera were erected with *Sphecosoma angustatum* Moschler as the type.

Pleurosoma trinitatis (Rothschild) (Pl. III, fig. 1)

Sphecosoma trinitatis Rothschild, 1911: 24.

Sphecosoma trinitatis, Rothschild, 1913: 471, pl. XIV, fig. 5.

Sphecosoma trinitatis, Hampson, 1914: 90.

Sphecosoma trinitatis, Draudt, 1915: 40, fig. 10h.

Sphecosoma trinitatis, Kaye & Lamont, 1927: 1.

Pleurosoma trinitatis, Orfila, 1935: 178.

Described by Rothschild from four male specimens collected at Caparo, Trinidad, in December, 1905, by S. M. Klages.

The figures in Rothschild and Seitz are misleading, for they indicate that the color of the abdominal segment following the peduncle is black, similar to the subsequent segments, rather than rufous brown. The length of the forewing in our specimens is 12 mm. The length of the forewing of the holotype in the British Museum is 12 mm., rather than the 14 mm. given by Rothschild.

Female similar to male except antennae prismatic rather than bipectinate.

Material.—Fifteen males and eight females.

Range.—Trinidad.

Sphecops Orfila

Differs from *Pleurosoma* in lacking the two thoracic bladder-like processes beneath the base of the first abdominal segment. First segment of abdomen much shorter in *Sphecops* than *Pleurosoma.* The males of *Sphecops* have a ventral valve covering the second and third abdominal segments which is absent in *Pleurosoma.*

Sphecops aurantiipes (Rothschild) (Pl. III, fig. 2)

Sphecosoma aurantiipes Rothschild, 1911: 25.

Sphecosoma aurantiipes, Rothschild, 1913: 471, pl. XIV, fig. 7.

Sphecosoma aurantiipes, Hampson, 1914: 91.

Sphecosoma aurantiipes, Draudt, 1915: 40, fig. 10h.

Sphecops aurantiipes, Orfila, 1935: 181.

Four of our Trinidad specimens have been compared with Rothschild's type from San Esteban, Venezuela, in the British Museum by Miss Rosemary Kenedy. Rothschild gives the length of the forewing as 14 mm. in his original description, whereas our measurement of the type is 12.5 mm. The Trinidad specimens have a forewing length of 10 to 11 mm. In this respect they resemble material that Rothschild had before him from Paraguay and Bolivia which he reported as having a wing length of 10 mm. The yellow bands on the abdomen of the Trinidad specimens are narrower than in the type from Venezuela.

Material.—Seven males.

Range.—Venezuela, Paraguay and Bolivia. A new record for Trinidad.

Homoeocera Felder

A genus related to *Gymnelia,* consisting of large, heavy-bodied species. We have not taken any species of this genus in the Arima valley.

Homoeocera magnolimbata Dognin

Homoeocera magnolimbata Dognin, 1911: II:3.

Homoeocera magnolimbata, Hampson, 1914: I:95, pl. V, fig. 1.

Homoeocera magnolimbata, Draudt in Seitz, 1915: VI:46, pl. 27b.

Kaye & Lamont (1927) report this species from Trinidad. One specimen appears to have been taken in Trinidad by F. W. Urich at St. Ann's in October, 1899. This specimen is not in the Urich Insect Collection at the Victoria Museum in Port-of-Spain. It is a large insect, approximately two inches in expanse, with hyaline wings and black abdomen with conspicuous white spots and some metallic blue.

Kenedy reports another specimen from Trinidad in the British Museum (Natural History) in the Joicey Collection, collected in 1909. It was part of a series from French Guiana, Amazons, East Bolivia and Peru.

Isanthrene Hubner

The thorax of the species in this genus is smoothly scaled in contrast to the species of *Homoeocera* which have hairy thoraxes.

Isanthrene tryhanei Rothschild

Isanthrene tryhanei Rothschild, 1911: XVIII: 26.

Isanthrene tryhanei, Rothschild, 1913: XX: 471, pl. XIV, fig. 24.

Isanthrene tryhanei, Hampson, 1914: I: 98.

Isanthrene tryhanei, Draudt in Seitz, 1915: VI: 47, pl. 10b.

Rothschild described this species from St. Ann's, Trinidad, from one female. It does not appear to have been collected since the original specimen was taken. It is another large species approximately two inches in expanse, with hyaline wings. The wings have a yellowish cast particularly along the costal and inner margin, in contrast to *Homoeocera magnolimbata.*

PHOENICOPROCTA Druce (not Hampson)

Stephens (1850) used the name *Hyela* for a generic name in Noctuidae. Walker (1854) used *Hyela* for one of his groups in the genus *Glaucopis* with the intention that the species he placed under *Glaucopis* would henceforth take the various group names as generic names. Hampson (1898) realized that Walker had employed a name, *Hyela,* that was preoccupied by Stephens, and erected a new name *Phoenicoprocta.* Druce (1898) was apparently cognizant of Hampson's monograph of the Ctenuchidae and described a presumed new species, *Phoenicoprocta metachrysea.* This species employing Hampson's new name was published in May, 1898, in advance of Hampson's monograph, which was not published until September, 1898. Thus Druce must be credited with the generic name *Phoenicoprocta.* The type of the genus is *Phoenicoprocta metachrysea* by monotypy which Dyar (1915) synonymized under *Phoenicoprocta vacillans* Walker (1856) on the basis of breeding carried out by H. W. B. Moore in British Guiana.

The males of this genus are easily distinguished in Trinidad by the blue or red spotted abdomen and carmine anal tufts. The *Aethria* species with a carmine tuft have a concolorous blackish abdominal dorsum. The females have a *Calonotus*-like abdomen and may be distinguished from *Calonotus* by vein R_2 in *Phoenicoprocta* being forked with veins R_{3+4+5} rather than from the cell as in *Calonotus.*

Phoenicoprocta vacillans (Walker)
Pl. III, figs. 3, 4, 5

Eunomia vacillans Walker, 1856: VII: 1617 (male).

Phoenicoprocta vacillans, Hampson, 1898: I: 197, pl. VII, fig. 11 (male).

Phoenicoprocta vacillans, Draudt in Seitz, 1915: VI: 47, pl. 12a (male). 1917: Supp.: 199.

Phoenicoprocta metachrysea Druce, 1898: (7) I: 404 (male).

Phoenicoprocta metachrysea, Hampson, 1898: I: 196, pl. VII, fig. 12 (male).

Phoenicoprocta metachrysea, Draudt in Seitz, 1915: VI: 47, pl. 12a; (male). 1917: Supp.: 199.

Phoenicoprocta chrysorrhoea Hampson, 1898: I: 196 (male).

Phoenicoprocta chrysorrhea, Draudt in Seitz, 1915; VI: 57, pl. 12a (male). 1917: Supp.: 199.

Phoenicoprocta trinitatis Strand, 1915: 21 (male).

Phoenicoprocta trinitatis, Draudt in Seitz, 1915: VI: 58, pl. 27f (male).

Phoenicoprocta nigropeltata Strand, 1915: 22 (male).

Leucotmemis albigutta Schaus, 1905: XXIX, No. 1420: 185 (female).

Leucotmemis albigutta, Hampson, 1914: Supp. 1:151, pl. VIII, fig. 2 (female).

Leucotmemis albigutta, Draudt in Seitz, 1915: VI: 70, pl. 27k; 1917: Supp.: 201 (female).

Leucotmemis thoracica Schaus, 1905: XXIX, No. 1420: 186 (female).

Leucotmemis thoracica, Hampson, 1914: Supp.: I: 150, pl. VIII, fig. 1 (female).

Leucotmemis thoracica, Draudt in Seitz, 1915: VI: 70, pl. 27k; 1917: Supp.: 201 (female).

Antichloris trinitatis Rothschild, New Syntomidae. 1912: XIX: 154 (female).

Autochloris trinitatis, Hampson, 1914: Supp. I: 104, pl. V, fig. 17 (female).

Antichloris trinitatis, Draudt in Seitz, 1915: VI: 136 (female).

Autochloris trinitatis, Draudt in Seitz, 1917: VI: Supp.: 197, pl. 27c (female).

Paramya chrysonota Hampson, 1898, I: 165, pl. VII, fig. 3 (female).

Paramya chrysonota, Draudt in Seitz, 1915: VI: 44, pl. 10k (female).

Calonotus hoffmannsi Rothschild, 1911: XVIII: 30 (female).

Calonotus hoffmannsi, Rothschild, Some unfigured Syntomidae, 1913: XX: 470, pl. XIII, fig. 35 (female).

Leucotmemis hoffmannsi, Hampson, 1914: Supp. I: 150 (female).

Paramya? hoffmannsi, Draudt in Seitz, 1915: VI: 44 (female).

Calonotus hoffmannsi, Draudt in Seitz, 1915: VI: 108, pl. 17k; 1917: Supp.: 201 (female).

Antichloris trinitatis, Kaye & Lamont, 1927: No. 3: 9.

Phoenicoprocta trinitatis, Kaye & Lamont, ibid: 1927: 1.

Phoenicoprocta rubiventer? Kaye & Lamont, 1927: 1.

Mydropastea chrysonota, Kaye & Lamont, 1927: 1.

The extreme variability of this species is indicated by the above synonymy, which undoubtedly is incomplete. Species designation has been based on the color of the collar, shoulder-covers, thorax, legs, abdomen and the ventral valve at the base of the abdomen in the males; and in the females, aside from the fact that they have been placed in the wrong genera, largely on the amount of hyaline areas in the wings.

In all of our specimens of *Phoenicoprocta* from Trinidad, British Guiana and Venezuela, and specimens loaned to us by the American Museum of Natural History from Mexico, British Guiana, Brazil and Peru, there is a small accessory cell in the forewing formed by a sectorial cross-vein between vein R_2 and vein R_{3+4+5}. This sectorial cross-vein emerges from R_{3+4+5} typically at the same point at which vein R_5 forks but may vary to the extent of being one millimeter more basad. Hampson (1898, p. 196) makes no mention of this cross-vein, which appears to be a good generic character. In addition, he states that vein 3 (vein Cu_1) of the hindwing is absent whereas it is invariably present though shortly stalked near the margin of the wing.

Furthermore, the genus is not divisible into two sections on Hampson's characters. In the species that he places in the first section, the discocellulars in the hindwing are not oblique throughout while in the forewing, vein 3 (vein Cu_1) is variable in a series from the same locality.

The commonest form at Simla, Trinidad, is *nigropeltata* Strand which was described from Trinidad. The character distinguishing this form from the typical *vacillans* is a black ventral valve with a white posterior edge, rather than a white valve with a black base and lateral edges. We have fifteen specimens that agree with this diagnosis of *nigropeltata,* but in four additional specimens the white edge is replaced by pink. Hampson (1898, p. 197), in his diagnosis of *vacillans,* stated "forecoxae white and crimson" (forecoxae white, red inside, as Kenedy noted on holotype). Eight of our 19 specimens agree in this respect, although more pink than red, and the remaining 11 specimens have the coxae white in front and blackish-brown inside. Four of these latter specimens have the pink-edged valve.

Ten additional specimens appear to be *trinitatis* Strand. This species is described as having short palpi. In our specimens the palpi appear to be the usual length. The origin of vein Cu_1 in the forewing is variable. The amount, position and presence of blue, crimson and black on the collar are extremely variable, encompassing *trinitatis, sanguinea* and new forms. The colors of the patagia and tegulae vary considerably in different lights because of their iridescent cast alone. The subdorsal macular stripes on the abdomen also vary considerably; sometimes they are large and distinct and in others, particularly near the base of the abdomen, they may be quite small. The ventrum of the abdomen in these specimens varies between black and blackish-brown. The ventral valve is light to dark pink and in one specimen with a considerable mixture of black scales. The posterior edge of the valve is finely white. The forecoxae in these ten specimens are white. The inside of the forecoxae and the remaining coxae usually red but sometimes blackish-brown.

In an additional specimen, an eleventh specimen, the shoulder covers are dark brown, forecoxae white and remaining coxae blackish-brown, the last four abdominal segments with a macular red subdorsal line and the ventral valve black with a white edge. This specimen is an unnamed, more melanotic, form of the preceding ten specimens.

Two specimens are very similar to *sanguinea* Walker. Our specimens differ in having a black transverse line at the base of the anal tuft and a narrower discocellular bar in the forewing. In the forewings of *sanguinea* Walker there is a small hyaline spot above vein R_5 which is definitely absent in all of our specimens. In Draudt's figure in Seitz (fig. 15a; 1915) the shoulder covers and the abdomen are reddish-brown rather than the correct color, crimson. Hampson (p. 198, 1898) gives the type locality as Honduras. Walker (1854, p. 172) in his original description did not state the origin of his specimen. The holotype in the British Museum (Natural History) has a hand-printed label "Honduras" in neither Walker's nor Hampson's writing.

The sexes in *Phoenicoprocta vacillans* are dimorphic. Besides, the amount of scaling in the wings of the females in Trinidad is extremely variable.

The female specimens will run in Hampson's generic key (1898) to *Mydropastea* (*Phaeo*) or *Paramya* (*Methysia*) since Hampson's dichotomous couplet (1898: 23 (B, a^4), 24 (b^4)) is based on the presence of abdominal tufts which are a male character. The abdominal aspect of the females differs radically from that of the males, which have a typically maculated series of red or iridescent blue spots whereas the females have blackish and iridescent blue longitudinal stripes. The abdomens of both males and females are somewhat bulbous caudad of the third or fourth abdominal segments.

The abdomens of all the female specimens are similar in showing a mid-dorsal stripe of iridescent blue or blue-green scales. This line is continued on the metathorax, which has a single mid-dorsal spot of the same color. The mid-dorsal stripe of the abdomen is bordered by a blackish-brown stripe on each side commencing on the first abdominal segment and followed laterally by another stripe of iridescent blue or blue-green which is replaced on the first abdominal segments by iridescent spots on a blackish-brown ground. Laterally the last subdorsal iridescent stripe is bordered by a fine blackish-brown line. In old or rubbed specimens the iridescence of the abdomen may have a coppery cast. The ventrum of the abdomen is dark brown to brownish-black and iridescent in some lights. There are iridescent blue points beneath the wings on the thorax and a line of iridescent blue on the caudal edge of the metathorax continuous from each side. The amount of carmine on the under side of the coxae is variable but is present in all female specimens on the distal end of the prothoracic coxae and frequently on the whole underside of the forecoxae but usually only at the distal apex of the meso- and metathoracic coxae. The anterior surface of the prothoracic coxae is marked with iridescent blue on a brown background, most distinct on the outer edge of the coxae.

Female Form I.—Two specimens. Both the fore and hindwings of this form are immaculate blackish-brown with no hyaline spots whatsoever. Some blue scales along the radius vein of the forewing. Kenedy compared this form with the holotype of *Antichloris trinitatis* Rothschild in the British Museum (Natural History) and believes them to be identical.

Female Form II.—This form differs from Form I in having a short elliptical hyaline spot below the middle of the cell and hyaline spots below the cell on each side of vein M_3 in the forewing. The hindwing has a hyaline spot below the cell, a small spot at the forking of vein Cu_{1+2} and vein M_3 and a large spot above vein M_3 to vein M_1. This last mentioned hyaline spot decreases in size approximately one-third above the line of scales representing vein M_2. One of the three specimens has crimson patagia. The abdominal and wing patterns of this form are similar to the figure in Draudt in Seitz (pl. 101; 1915) of *Mydropastea chrysonota* Hampson.

Female Form III.—Differs from Form II in having two or three small hyaline spots above the larger hyaline spots on each side of vein M_3 of the forewing. The spot anterior to the large spot in cell M_2, if present, is minute. The hyaline area beneath the discal cell is larger and may extend slightly below the anal vein. A slight hyaline streak within the discal cell along the cubital vein. In the hindwing the hyaline spot below the cell is larger than in Form II and may extend slightly below the anal vein.

Female Form IV.—Three specimens were taken of this form. The hyaline areas in the forewing are progressively more extensive by the addition of a hyaline spot in the forewing between veins Cu_1 and Cu_2, a large hyaline streak below the anal vein and the posterior portion of the discal cell. In the hindwing the hyaline area extends below the anal vein. None of the above four female forms is to be interpreted as being stable, as they grade into one another.

Paramya chrysonota Hampson is a synonym of *Phoenicoprocta vacillans* Walker. One specimen of *chrysonota* was collected at Itaituba, Amazons, Brazil, and described as a male. Kenedy inspected the holotype of *chrysonota* in the British Museum (Natural History) and discovered that, in point of fact, it is a female rather than a male. It agrees with our female series in Form II from Simla, Trinidad.

Some discussion of the past history of *Paramya chrysonota* would not be out of place. Section I of *Paramya* Hampson (p. 164; 1898) establishes with *Paramya intersecta* Hampson (p. 164; 1898) as the genus type is synonymized by Hampson (p. 384; 1914) under *Methysia* Butler with the genus type species *Methysia* (*Glaucopis*) *notabilis* Walker (1854) on the basis that Hampson's figure (fig. 205, 1898) of *Methysia notabilis* is correct. Thus *Methysia* contained the following species: *notabilis* Walker, *intersecta* Hampson, *senetus* Schaus, *picta* Druce and *melanota* Hampson. This left *bricenoi* Rothschild, *flavia* Schaus, *picta* Druce and *chrysonota* Hampson with no proper generic name as these species were in Hampson's section II of the genus *Paramya*.

However, Hampson was not the legitimate author of *Paramya* nor was he privileged to select a type species, as Druce in May of the same year (1898) and also, for that matter, Schaus in June had each described new species employing the generic name *Paramya*. Hampson in his *Cat. Lep. Phal.* I, published in September, included both Druce's and Schaus's new species in the second section of his presumed new genus. Neither Druce nor Schaus wrote generic descriptions and what apparently happened was that both were familiar with the new genus that Hampson was to erect in his monograph and described their new species in that genus. Unfortunately their descriptions were published a few months previous to Hampson's monograph. The type species of *Paramya* is *Paramya picta* Druce.

However, *Paramya* was preoccupied by Conrad (1860) in Mollusca and, consequently was unavailable for Druce's species. Travassos (1946) erected a new name, *Metamya,* for *Paramya* Druce. The genotype is *Metamya picta* Druce, and *Paramya flavia* Schaus and *Ichoria bricenoi* Rothschild are congeneric. *Paramya chrysonota* Hampson (1898), with which we are concerned, is not congeneric with either section of Hampson's original conception of the genus and is a female *Phoenicoprocta.*

Kaye & Lamont (1927) placed *Paramya chrysonota* Hampson (1898) in the genus *Mydropastea* Hampson (1898). I presume they did this because *Paramya* as conceived by Hampson has veins R_s and M_1 of the hindwing long stalked. Apparently the specimens that Kaye & Lamont possessed from Trinidad resembled our specimens from Trinidad in which veins R_s and M_1 are approximate. Thus, they placed the species in *Mydropastea,* albeit incorrectly.

In Hampson's Supplement (p. 209; 1914) he synonymized his genus *Mydropastea* (1898) under *Phaio* Neumoegen (1894). Draudt in Seitz picked up the synonymy but changed the spelling of the genus to *Phaeo* following Wagner (1912).

Calonotus hoffmannsi Rothschild (1911) is a synonym of *Phoenicoprocta vacillans* Walker. Draudt in Seitz (p. 108, 1915; p. 201, 1917) was correct in his suggested synonymy, namely, *Calonotus hoffmannsi* (1911) is a synonym of *Paramya chrysonota* (1898). Hampson in his Supplement (p. 150; 1914) placed *hoffmannsi* in *Leucotmemis. Calonotus hoffmannsi* was described from Itaituba, Brazil, the same type locality as *Paramya chrysonota.*

The male genitalia of the specimens from Trinidad, two from Caripito, Venezuela, and a specimen from British Guiana are similar. However, the genitalia of two specimens, one from Candelopa, Peru, and another from Pitaguaya, Bolivia, while very similar in other respects, have a distinctly different pair of protuberances on either side of the base of the uncus. They are rounded and bulbous in the latter specimens and pointed in our *vacillans.* The general facies of the Peruvian and Bolivian specimens appears to be the same as our material.

Judging from the preceding discussion it is quite likely that a large number of the species described in *Phoenicoprocta* will be synonymized. It is necessary, however, to study genitalia of the holotypes or in lieu of that, of topotypical material. In the subsequent paragraphs I shall give an indication of the probable disposition of some of the species of *Phoenicoprocta.*

Phoenicoprocta mexicana (Walker) will have to be removed from the genus. The sexes are not dimorphic. The wing venation differs in the forewing by lacking the sectorial vein in the radials. It differs in the hindwing by veins Cu_1 and Cu_2 being completely united and veins R_s and M_1 being approximate, not connate or very shortly stalked.

Forbes (1930) correctly removed *Zygaena parthenii* Fabricius from the genus *Mallodeta* where Hampson (1898) placed it. Nonetheless, it does not appear to be a *Phoenicoprocta.* The venation differs in the forewing by lacking the sectorial vein of the radials. It also differs in the forewing in that vein R_5 forks from the radial midway between vein R_2 and the forking of veins R_3 and R_4, whereas in *vacillans* it separates very near the forking of veins R_3 and R_4. I have not seen a female nor has the female been described, so I do not know if the sexes are dimorphic. The hindwing of *partenii* is similar in that veins Cu_2 and Cu_3 are forked near the margin of the wing and veins M_1 and R_s are slightly stalked.

Phoenicoprocta paucipuncta Dyar is not a *Phoenicoprocta* but probably, as Forbes (1939) suggests, a color form of *Cosmosoma gemmata* Butler.

The following species may well be only color forms of *vacillans.* Males: *rubiventer* Hampson from Panama; *sanguinea* (Walker), the species type for which Hampson gives the type locality as Honduras though Walker did not know the type locality in his original description, the handprinted label on the holotype stating Honduras being in neither Walker's nor Hampson's writing; *astrifera* (Butler) from Braga (Amazons) Brazil; *haemorrhoidalis* (Fabricius) from Brazil; *flavipicta* Hampson from British Guiana; *variabilis* Kaye from from Panama; *intermedia* Forster from Venezuela and *nigriventer* Gaede from Venezuela; females: *biformata* Gibbs and the aberration *atrapennis* Strand from British Honduras; *insperata* (Walker) from Para, Brazil. *Phoenicoprocta astrifera* (Butler), as Draudt in Seitz figures it (pl. 12c; 1915), has wide terminal wing margins. The holotype has wing margins as in *vacillans.* The following were described as forms of *vacillans* and should be reappraised: *aurantipatagiata* Draudt, *auriflua* Draudt, *nigricoxa* Zerny and *punicea* Strand.

While I have seen no specimens from the West Indies, the form existing there appears to be a distinct species. Hampson (1914: 125) synonymized *thomae* (Lucas), *cubana* Druce and *selecta* (Herrich-Schaffer) under *capistrata.* Fabricius's type locality for *capistrata* is "America", which meant the mainland, and

Herrich-Schaffer's type locality for *selecta* is Brazil. Both are females and are more likely the female forms of *vacillans* while *exima* (Herrich-Schaffer), described from Cuba, is the actual female form from the West Indies. If the above suggestions prove to be correct, *thomae* (Lucas) has priority and *capistrata* (Fabricius) would preoccupy *vacillans* (Walker).

Phoenicoprocta jamaicensis Schaus is based on a female type. *Phoenicoprocta lydia* (Druce), with the synonyms *thera* (Druce) and *demona* (Druce), is a distinct species from Mexico. It has the same fore- and hindwing venation as the *vacillans* we have from Trinidad and is sexually dimorphic in the same fashion.

The forms of *Phoenicoprocta* from South Brazil, Paraguay, Uruguay, Peru and Bolivia appear to be distinct from the forms found from the Amazons north. Jorgensen's species *schreiteri* and *sieboldi* appear to be the slight variants of *latimarginata* Gaede (1926). The wider margins of the wings alone would seem to distinguish these southern forms from *vacillans*. Two genitalia from Bolivian and Peruvian specimens that were mentioned before are distinct from *vacillans* though the facies of the insects are similar.

Phoenicoprocta teda (Walker) is a distinct species but quite possibly not a *Phoenicoprocta*.

Loxophlebia Butler

In our species of *Loxophlebia* the discocellulars are not oblique throughout in the hindwing as Hampson (1898: 206) states in his generic diagnosis. Furthermore, vein Cu_2 of the hindwing is present but very shortly stalked with vein Cu_1; the forking occurs at the inner edge of the black wing border. The following genera, *Mesothen* and *Loxophlebia,* may be separated from other Trinidad genera by vein M_2 of the forewing originating well above vein M_3, more than a third but less than half the distance up between veins M_1 and M_3. The same vein, M_2, in *Pheia* is approximately a fifth in our species. The genus *Mesothen* is very close to *Loxophlebia* and I am unable to separate these genera except superficially on the basis of the specimens on hand, so the following key will serve to distinguish the Trinidad species in both genera. Surinam and British Guiana forms of *Loxophlebia bisigna* in the key would run to *Mesothen aurantegula,* so I have included an additional couplet in the event that these forms are found in Trinidad in the future.

1. Abdomen with some red or orange color ..... 2 (*Loxophlebia*)
   Abdomen with no red or orange color ..... 4 (*Mesothen*)
2. Abdomen with broad lateral orange bands ..... *diaphana*
   Abdomen with no lateral bands of any color 3
3. Abdomen blackish-brown with subdorsal white spots on basal segment and subdorsal red spots on fourth abdominal segment ..... *bisigna* (Trinidad form?)
   Abdomen black with the last four segments orange ..... *postflavia*
4. Disc of thorax orange-red ..... *pyrrha*
   Disc of thorax black or blackish-brown .. 5
5. Tegulae with orange patches 6
   Tegulae concolorous brownish-black 7
6. Abdomen concolorous blackish-brown ..... *aurantegula*
   Abdomen with subdorsal white spots on basal abdominal segments ..... *bisigna* (extra-limital forms)
7. Male with abdominal ventral valve. Female with white subventral abdominal band ..... *endoleuca*
   Male without abdominal ventral valve. Female without white subventral abdominal band ..... *desperata*

Loxophlebia diaphana (Sepp)

Glaucopis diaphana Sepp, 1848: II: 185, pl. 81.

Glaucopis discifera, Walker, 1854: I: 178.

Laemocharis bura Butler, not Herrich-Schaffer, 1877: I: 33, pl. 11, fig. 12.

Chrysostola albifrons Moschler, 1872: XXXIII: 344.

Loxophlebia diaphana, Hampson, 1898: I: 209.

Loxophlebia diaphana, Draudt in Seitz, 1915: VI: 62, pl. 12g.

Loxophlebia diaphana, Kaye & Lamont, 1927: No. 3: 2.

We have not collected this species at Simla, but Norman Lamont collected a specimen at Palmiste in January, 1921.

Range.—Surinam and Amazons.

Loxophlebia bisigna (Kaye)
(Pl. III, fig. 6)

Pheia bisigna Kaye, 1911: XLIV: 146.

Pheia bisigna, Hampson, 1914: Supp. I: 128, pl. VI, fig. 17.

Loxophlebia klagesi Rothschild, 1811: XVIII: 29.

Loxophlebia klagesi, Rothschild, 1913: XX: 471, pl. 14, fig. 21.

Loxophlebia clagesi, Hampson, 1914: Supp.: 135.

Pheia bisigna, Draudt in Seitz, 1915: VI: 61; 1917: Supp.: 199, pl. 27f.

Loxophlebia klagesi, Draudt in Seitz, 1915: VI: 63, pl. 12g.

Loxophlebia bisigna, Kaye & Lamont, 1927: No. 3: 2.

I have followed Draudt's (1915, 1917) synonymy of this species. The abdominal characteristics of the original type material of *klagesi* are variable. Rothschild's paratype of *klagesi* from Caporo (*sic.* Caparo), Trinidad, is similar to our three specimens in having paired reddish subdorsal spots on the fourth abdominal segment. Two paratypes from Maripa, Caura River, Venezuela, have paired reddish spots on the third and fourth abdominal segments. The four Surinam types along with Kaye's holotype of *bisigna* from the Potaro River, British Guiana, lack these reddish spots. Kaye's *bisigna* was described two months earlier than Rothschild's *klagesi.* The label on the holotype of *klagesi* in the British Museum (Natural History) has on the locality label "Aroewarwa Creek, Maroewyn valley, Surinam, May 1905. (S. M. Klages)" whereas in Rothschild's original description the material from this locality is given as February.

Range.—Trinidad, Venezuela and Guianas.

Loxophlebia postflavia Druce
(Pl. III, fig. 7)

Loxophlebia postflavia Druce, 1898: I: 407.

Loxophlebia postflavia, Hampson, 1898: I: 210, pl. VIII, fig. 4.

Loxophlebia postflavia, Druce in Seitz, 1915: VI: 64, pl. 12h.

Two specimens were collected. This is a new record for Trinidad.

Range.—Described from French Guiana. Specimens in British Museum from British Guiana and Surinam.

MESOTHEN Hampson

In this genus, as in the former genus, Cu_1 and Cu_2 of the hindwing are forked within the dark terminal band. Thus Cu_2 is present, not absent, as stated in Hampson's original description (p. 212; 1898). The species of this genus have been keyed in the genus *Loxophlebia.*

Mesothen aurantegula (Jones)

Loxophlebia aurantegula D. Jones, 1914: 4, pl. 1, fig. 6.

Mesothen aurantegula, Hampson, 1914: Suppl. I: 146, pl. VII, fig. 25.

Mesothen aurantegula, Draudt in Seitz, 1917: VI: 200, pl. 27h.

Mesothen aurantegula, Kay & Lamont, 1927: No. 3: 2.

An unusual record based on one specimen collected by Norman Lamont at Palmiste in January. The species was described from one female taken at Santos, southern Brazil.

Range.—Southern Brazil and Trinidad.

Mesothen endoleuca Druce
(Pl. III, fig. 8)

Mesothen endoleuca Druce, 1905: XV: 460.

Mesothen endoleuca, Hampson, 1914: Supp. I: 146, pl. VII, fig. 27.

Mesothen endoleuca, Draudt in Seitz, 1915: VI: 66, pl. 27i.

Female with a ventrolateral band of white scales on abdomen, broadest at the base of the abdomen. Black border at the apex and margins of the forewing much wider than in male. Forecoxae white in both sexes.

Eleven specimens were collected, of which five were females.

Range.—Venezuela. A new record for Trinidad.

Mesothen desperata (Walker)

Pseudomya desperata Walker, 1856: VII: 1602.

Mesothen desperata, Hampson, 1898: 215, pl. VIII, fig. 3.

Mesothen desperata, Hampson, 1914: 146, fig. 20.

Mesothen desperata, Draudt in Seitz, 1915: 66, pl. 27l.

Mesothen desperata, Lamont & Callan, 1950: 197.

One specimen reported by Lamont & Callan (1950: 197) was collected by Lamont in April at Palmiste. It is an aberrant species for the genus as the male lacks a ventral valve according to Hampson (1914: 146). Since our females of *endoleuca* have a ventrolateral band broadest at the base of the abdomen, not mentioned in the description of *desperata,* I have used this character in the key to separate the female specimens of these two species.

Range.—Panama, Guianas, Brazil, Paraguay and Argentina.

Mesothen pyrrha (Schaus)
(Pl. III, fig. 9)

Dycladia pyrrha Schaus, 1889: V: 89.

Dycladia pyrrha, Druce, 1896: II: 348, pl. 71, fig. 27.

Mesothen pyrrha, Hampson, 1898: I: 214.

Mesothen pyrrha, Draudt in Seitz, 1915: VI: 66, pl. 12i.

Mesothen pyrrha, Kaye & Lamont, 1927: No. 3: 2.

Only one of our male specimens has the valve white. In the remaining specimens it is brown with the margins at the base of the valve broadly and irregularly white. Only the proximal end of the coxae is white, while the remainder of the coxae is brown.

Material.—Four males and one female.

Range.—Mexico to Peru and the Guianas.

Pheia Walker

Very close to *Cosmosoma* but the lower side of the discal cell is very short and the discocellular veins oblique. The only Trinidad species is considerably smaller than any of the Trinidad *Cosmosoma.* The wingspread of the smallest Trinidad species of *Cosmosoma, klagesi* and *remotum,* is 32 mm. whereas the following species is 22 mm.

Pheia **beebei,** new species
(Pl. I, fig. 2; Pl. II, fig. 2)

Length of forewing of male 11-12 mm., of female 13 mm.

Closely related to *Pheia gaudens* (Walker), from which *beebei* differs in its smaller size and narrower apical black patch on the forewings. *Pheia gaudens* was described from Para, Brazil, and has been reported from Venezuela and Peru.

Antennae bipectinate with a tuft on the apex of each pectination. Pectinations along shaft of antennae on the respective sides of the antennae of similar length except near base and apex. Pectinations on outside of antennal shaft slightly longer than on the inside. Shaft of antennae of male blackish-brown and of female brown. Scape of antennae with bright yellow tuft of scales most conspicuous on the inside anterior edge.

Palpi, front of head and behind eyes bright yellow. Basal segment of palpi clothed with long hair of irregular length, thus somewhat ragged in appearance. The remaining two segments of palpi finely scaled and upturned to vertex of head. Vertex of head black with some scattered iridescent blue scales most conspicuous in the center.

Collar bright yellow. Tegulae bright yellow, finely edged with black scales on the outside and broadly edged with black on the inside edge. A patch of iridescent blue scales within the black border of the inside edge.

Dorsum of the mesothorax yellow and of metathorax iridescent blue. Caudal edge of metathorax with a narrow line of bright yellow scales. Pleura and ventrum of thorax bright yellow. Legs yellow with small brown patches on the mesothoracic and metathoracic legs. Forecoxae immaculate bright yellow. Some brown on distal segments of all tarsi.

Veins and margins of wings brown-black. Margins of wings narrow but broadening at apex of forewings (.91 mm. along vein R_5). In the forewing the Sc vein and area between discal cell and Sc vein to slightly beyond the end of the cell yellow. A small patch of yellow at base of wing between the discal cell and a line of black scales marking the anal wing fold. Another yellow patch more densely scaled between the wing fold to slightly beyond vein 2dA and terminating distally at a small black patch which lies on the anal fold. The distal end of the small black patch is slightly more than 2 mm. from the base of the wing. Some scattered black scales on the part of vein 2dA which extends into the yellow basal patch, but the basal part of the vein yellow. Scales representing vein M_2 extend within the discal cell for approximately half the length of the cell.

Hindwing with creamy yellow patch at base of wing extending along anterior part of discal cell for two-thirds the length of cell. The black margin of the wing diminishing gradually and disappearing completely near the base of the wing. This part of the wing is normally hidden beneath the forewing. The creamy patch extends within the base of the cell and terminates at a small black spot. Area below discal cell hyaline. A small streak of yellow scales in brown-black anal margin at base of wing.

Basal segment of abdomen including bullae bright yellow but each of the subsequent segments except the terminal segment with the anterior margin bright yellow and posterior margin brown-black. These latter brown-black bands expanding into triangular marks on the dorsum and obliterating the yellow on the mid-dorsum. The brown-black bands have scattered patches of iridescent blue or blue-green scales in various lights. The terminal segment of the abdomen is brown-black. Ventrum of abdomen yellow.

I take pleasure in naming this species after William Beebe, Director Emeritus of the Department of Tropical Research, New York Zoological Society.

Material.—All types were taken at Simla, Arima Valley, Trinidad. Holotype, male, Catalog No. 57207, 16 XII; 2 paratypes (57208) 15-I and (57209) 21-I.

Disposition of type material.—The Department of Tropical Research, New York Zoological Society, will retain two paratypes, Catalog

Nos. 57208 and 57209. The holotype, Catalog No. 57207, is in the American Museum of Natural History.

Chrostosoma Hubner

Distinctive in this group of genera by having vein R_1 of the forewing stalked with the other radial veins and not free from the cell.

Chrostosoma viridipunctatum Rothschild
(Pl. III, fig. 10)

Chrostosoma viridipunctatum, Rothschild, 1911: 30.

Chrostosoma viridipunctatum, Rothschild, 1913: 471, pl. XIV, fig. 34.

Chrostosoma viridipunctata, Hampson, 1914: 148.

Chrostosoma viridipunctatum, Draudt in Seitz, 1915: 67, pl. 12k.

Without an examination of the genitalia of the holotype in the British Museum (Natural History), it is impossible to be certain of the above identification. A genitalic examination of all the echemus-like species of this genus is nccessary to determine the valid species and their respective ranges.

Hampson's (1898: 215) division of the genus into two sections on the basis of the presence or absence of vein Cu_1 in the hindwing is incorrect, as this vein is only forked ncarer the margin of the wing in the first section than in the second section of the genus. Kenedy found that the holotypes of *decisum* and *viridipunctum* had both preserved vein Cu_1.

The series of *viridipunctatum* in the British Museum (Natural History) contains three female specimens from Trinidad, one from Caparo and two from Tabaquite. One of the latter specimens has metallic coloring similar to Rothschild's type, whereas in our series of males and females any metallic coloring if present is slight. In this same British Museum series are specimens from Argentina, Paraguay, southern Brazil, French Guiana and Surinam containing both males and females.

The holotype is a female. The type locality is Yungas de la Paz, Bolivia, 1,000 meters.

In our series of *viridipunctatum* the iridescent blue, while variable, is never pronounced. Some iridescent blue on the front and vertex of the head, collar and shoulder covers and faint traces on the subdorsum of the abdomen.

Materials.—Nine specimens (5 males and 4 females). A new record for Trinidad.

Range.—Guianas to Argentina and Bolivia.

Leucotmemis Butler

Leucotmemis differs from *Chrostosoma* in having vein R_1 of the forewing rising from the cell rather than stalked on R_2-R_5. Vein Cu_1 of the forewing from close to angle of the cell.

Leucotmemis nexa (Herrick-Schaffer)

Loemocharis nexa Herrick-Schaffer, 1854: f. 254.

Leucotmemis nexa, Hampson, 1898: 224.

Leucotmemis nexa, Draudt in Seitz, 1915: 70, pl. 13a.

Leucotmemis nexa, Kaye & Lamont, 1927: 2.

This species, reported from Trinidad by Kaye & Lamont from St. Ann's, Palmiste and Rock Penal Road, has not been taken at Simla. It is probably improperly placed in *Leucotmemis* as the facies is entirely different from the remainder of the genus with the exception of *L. insperata* (Walker). *L. nexa* resembles a female *Phoenicoprocta vacillans* or a *Calonotus.* It may be separated from the female *vacillans* by having white lateral spots on the first abdominal segment. The sex of *nexa* has never been reported. The facies of *L. insperata* can be encompassed within the range of variation of the female *P. vacillans.* Walker described *insperata* from one female collected at Para, Brazil. There does not appear to be any distinctive venational difference between *Phoenicoprocta* and *Leucotmemis,* though most likely the accessory cell between vein R_2 and vein R_{3+4+5} of the forewing in *Phoenicoprocta* is sufficient to separate the genera. In the only female of *Leucotmemis* I have seen, *L. lemoulti* (Rothschild), the antennal pectinations are equal on both sides of the antennal shaft, whereas in *Phoenicoprocta* and *Calonotus* the antennal pectinations in the female are much longer on the outside of the antennal shaft than on the inside. In addition, *Calonotus* has vein R_2 of the forewing rising from the cell as well as vein R_1. *Calonotus hoffmannsi* Rothschild, which was removed to *Leucotmemis* by Hampson (1914), is a synonym of *Phoenicoprocta vacillans.* Rothschild similarly described *lemoulti* in *Calonotus.*

Range.—Mexico to Brazil.

Nyridela Lucas

A genus containing only two species, which may be distinguished from related forms by their large size. Vein R_1 of the forewing rises from the cell and Cu_2 from near the angle of cell.

Nyridela chalciope (Hubner)

Isanthrene chalciope Hubner, 1827: 20, figs. 469, 470.

Glaucopis acroxantha Perty, 1834: 156, pl. 31, fig. 4.

Nyridela chalciope, Hampson, 1898: 218.

Nyridela chalciope, Draudt in Seitz, 1915: 69, pl. 9k.

Nyridela chalciope, Kaye & Lamont, 1927, 2.

A large hyaline-winged species with black margins and a black band running from the middle of the costal margin of the forewing to the anal angle. Antennae with yellow tips and the abdomen black with iridescent bluish-green spots.

We have not collected this species at Simla but Kaye & Lamont report it from St. Ann's Valley in the western part of the Northern Range. This species is the South American counterpart of the closely related species from Central America, *Nyridela xanthocera* (Walker).

Range.—Colombia and Brazil.

Cosmosoma Hubner

A large, somewhat confused, genus that needs revision. Many of the species that Hampson (1898) originally included he subsequently (1914) placed in the genus *Gymnelia* which has a lobed hindwing. Eight species are recorded from Trinidad, of which we record six species.

1. Discal bar broad 2
   Discal bar narrow 4
2. Tegulae and patagia bright red *rubriscapulae*
   Tegulae and patagia brown or blue.... 3
3. Abdomen with scarlet subdorsal streaks on first segment .....*melathoracia*
   Abdomen without scarlet subdorsal streaks on first segment .....*subflamma*
4. Antennae with white tips 5
   Antennae without white tips 7
5. Costal margin and terminal band of forewing immaculate black .....*anoxanthia*
   Patches of orange-red along costal margin and terminal band at tornus of forewing 6
6. Abdomen with a dorsal red stripe . *achemon*
   Abdomen without a dorsal red stripe *remotum*
7. Abdomen concolorous orange-yellow *klagesi*
   Abdomen yellow, second and third segments black with lateral blue spots . *pytna*

Cosmosoma rubriscapulae Kaye (Pl. III, fig. 11.)

Cosmosoma rubriscapulae Kaye, 1901: 116.

Cosmosoma rubriscapulae, Hampson, 1914: 156.

Cosmosoma rubriscapulae, Draudt in Seitz, 1915: 71, fig. 13b.

Cosmosoma rubriscapulae, Kaye & Lamont, 1924: 3.

The large size combined with the scarlet patagia and tegulae renders this moth distinctive in Trinidad from other *Cosmosoma* species. We have collected three males and three females of this species at Simla. In our specimens the discal bar of the forewings of the females is broader and heavier than in the males.

Range.—Reported only from Trinidad.

Cosmosoma subflamma subflamma (Walker) (Pl. III, fig. 12)

Glaucopis subflamma Walker, 1854: 159.

Laemocharis panopes Herrich-Schaffer, 1854: 243.

Cosmosoma subflamma, Hampson, 1898: 227.

Cosmosoma subflammum, Draudt in Seitz, 1915: 71, fig. 13b.

Cosmosoma subflamma, Kaye & Lamont, 1924: 3.

The bright red legs distinguish this species from other *Cosmosoma* species in Trinidad. Schaus described a species, *lucia,* from St. Lucia, B.W.I., which Hampson (1898) records as a subspecies of *subflamma* in which the legs are largely black.

Material.—We have taken only one male. Another specimen was taken by F. W. Urich in 1918 in the Arima Valley and Lamont captured a specimen on May 28, 1921, at Palmiste.

Range.—St. Lucia to south Brazil on the eastern side of South America.

Cosmosoma melathoracia Kaye (Pl. III, fig. 13)

Cosmosoma melathoracia Kaye, 1901: 115, pl. V, fig. 10.

Cosmosoma melathoracia, Hampson, 1914: 157.

Cosmosoma melathoracia, Draudt in Seitz, 1915: 73, fig. 13e.

Cosmosoma melathoracia, Kaye & Lamont, 1924: 3.

Male with dorsal line of iridescent blue scales and a brown valve at base of abdomen edged laterally with white.

Material.—Six males.

Range.—Described and reported only from Trinidad.

Cosmosoma anoxanthia Druce
(Pl. III, fig. 14)

Cosmosoma anoxanthia Druce, 1905: 460.

Cosmosoma bolivarensis Klages, 1906: 536.

Cosmosoma anoxanthia, Hampson, 1914: 165, pl. VIII, fig. 25.

Cosmosoma anoxanthium, Draudt in Seitz, 1914: 80, fig. 27m.

Cosmosoma achemon, f. *bolivarensis,* Draudt in Seitz, 1914: 79.

Cosmosoma anoxanthia, Kaye & Lamont, 1924: 3.

Female similar to male except that on the forewing the oblique quadrate patch of blackish-brown scales from the lower extremity of the discal cell to tornus (between veins Cu_1 and Cu_2) is absent in the female.

Material.—Six males and three females.

Range.—Trinidad, Venezuela and Bolivia.

Cosmosoma achemon (Fabricius)
(Pl. III, fig. 15)

Zygaena achemon Fabricius, 1781: 162.

Euchromia tyrrhene Hubner, 1827: 23, figs. 483-484.

Cosmosoma voltumna Druce, 1897: 303.

Cosmosoma achemon, Hampson, 1898: 247.

Cosmosoma achemon, ab. *tyrrhene,* Hampson, 1914: 527.

Cosmosoma perfenestratum Dyar, 1899; 175.

Cosmosoma achemon, Draudt in Seitz, 1914: 79, fig. 14c.

Cosmosoma perfenestratum, Draudt in Seitz, 1914: 80, 1917: 201.

The very bright red dorsal abdominal stripe will separate this species from all other Trinidad *Cosmosoma.* A new record for Trinidad.

Material.—One male from St. Augustine, Trinidad.

Range.—Jamaica, Haiti, Venezuela and Brazil.

Cosmosoma remota (Walker)

Glaucopis remota Walker, 1854: 170.

Cosmosoma remotum, Hampson, 1898: 248, pl. IX, fig. 22.

Cosmosoma remotum, Draudt in Seitz, 1914: 80, fig. 14c.

Cosmosoma remota, Kaye & Lamont, 1924: 3.

Reported by Kaye & Lamont from Tobago. This species is very close to *achemon,* from which it may be distinguished by the absence of the red abdominal dorsal stripe. We have not taken this species in the Arima Valley but Kaye has specimens from Trinidad in his collection.

Range.—Trinidad, Tobago and Venezuela.

Cosmosoma klagesi Rothschild
(Pl. III, fig. 16)

Cosmosoma klagesi Rothschild, 1910: 509.

Cosmosoma klagesi, Rothschild, 1913: 470, pl. XIII, fig. 11.

Cosmosoma clagesi, Hampson, 1914: 170.

Cosmosoma klagesi, Draudt in Seitz, 1914: 82, fig. 14g.

Cosmosoma klagesi, Kaye & Lamont, 1924: 4.

Material.—Fifty-one males and twenty females. Our commonest *Cosmosoma* in the Arima Valley.

Range.—Trinidad and Brazil.

Cosmosoma pytna Druce

Cosmosoma pytna Druce, 1906: 78.

Cosmosoma pytna, Hampson, 1914: 157, pl. VIII, fig. 12.

Cosmosoma pytna, Draudt in Seitz, 1914: 83, fig. 27m.

Cosmosoma pytna, Kaye & Lamont, 1924: 4.

We have not collected this species in the Arima Valley nor, insofar as the literature reveals, has it been collected since the holotype was taken in Trinidad.

Dixophlebia Butler

The fringes of hair along the lower radial, median and cubital veins of the forewing will distinguish this genus from other genera of Ctenuchidae.

Dixophlebia holophaea Hampson
(Pl. III, fig. 17)

Dixophlebia holophaea Hampson, 1909: 346.

Dixophlebia holophaea, Hampson, 1914: 174, pl. IX, fig. 9.

Dixophlebia holophaea, Draudt in Seitz, 1914: 85, fig. 14k.

A grayish-black moth with hyaline in the discal cell areas in both wings.

Material.—Two males.

Range.—Surinam and British Guiana. A new record for Trinidad.

Pseudomya Hubner

A genus probably derived from *Saurita,* from which *Pseudomya* may be distinguished by having the hind tarsal joints fringed with scales in the males.

Pseudomya melanthus (Stoll)
(Pl. III, figs. 18, 19)

Sphinx melanthus Stoll, 1782: pl. 367, C.

Pseudomya melanthus, Hampson not Stoll, 1898: 264. (*trigutta* Walker).

Pseudomya melanthus, Hampson, 1914: 175.

Pseudomya melanthus, Draudt in Seitz, not Stoll, 1914: 87, fig. 14m. (*trigutta* Walker).

Pseudomya melanthus, Draudt in Seitz, 1917: 202.

Pseudomya melanthus, Kaye & Lamont, 1927: 4.

The facies of this species is very similar to *Pseudomya sanguiceps* Hampson from Panama (Hampson, 1898: 264, pl. X, fig. 4) figured in Seitz on line 14m. The medial black band of the forewings is darker and wider than shown in the Seitz figure and extends from the costal to the inner margin in the male. Our single female, while having a very distinct quadrate patch of dark scales at the discal veins, has only a scattering of scales below the cell. Length of forewing of the male 10 mm. and of the female 11 mm.

Material.—One male and one female.

Range.—Trinidad and Surinam.

Rhynchopyga Felder

Differs from *Saurita* and *Pseudomya* in having Cu_1 and M_3 on a long stalk in the hindwing.

Rhynchopyga flavicollis (Druce)
(Pl. III, fig. 20)

Amycles flavicollis Druce, 1884: 46, pl. 7, fig. 11.

Rhynchopyga flavicollis, Hampson, 1898: 270.

Rhynchopyga flavicollis, Draudt in Seitz, 1914: 90, fig. 15e.

The long, very narrow brown wings of this slender, small species is distinctive. Our single male specimen lacks the orange streak on the patagia present on the holotype. Our specimen also has less orange on the tegulae.

Material.—One male. A new record for Trinidad.

Range.—Guatemala, British Honduras, Costa Rica, Panama and Colombia.

Saurita Herrick-Schaffer

Probably not a natural genus but attempts to divide it have thus far been unsuccessful. Veins M_3 and Cu_1 of the hindwing arise from the same point or are very shortly stalked.

1. Abdomen of male with ventral valve covering basal segments. Abdomen of male and female large, with iridescent blue sublateral spots and crimson anal tufts.... *cassandra*
   Abdomen of male with no ventral valve. Abdomen of male and female otherwise 2
2. Thorax with crimson patches only..... 3
   Thorax orange red or crimson 6
3. Abdomen with whitish patches 4
   Abdomen with brown or black patches.. 5
4. Discal cell of forewing brown-scaled *lacteata*
   Discall cell of forewing hyaline.. *crimensis*
5. Forewing uniformly hyaline or smoky hyaline ..... *perspicua*
   Forewing with post-discal milky hyaline band ..... *clusia*
6. Vertex of head crimson red..... *salta*
   Vertex of head black 7
7. Wings fully scaled with only slight thinning of scales between veins ..... *concisa*
   Discal cell and area below discal cell of forewing hyaline 8
8. Underside of body yellow ..... *temenus*
   Underside of body black ..... *afflicta*

Saurita cassandra (Linnaeus)
(Pl. III, fig. 21)

Sphinx cassandra Linnaeus, 1758: 494.

Saurita cassandra, Hampson, 1898: 274, fig. 127.

Saurita cassandra, Draudt in Seitz, 1915: 93, fig. 15f.

Saurita cassandra, Kaye & Lamont, 1927: 4.

A robust, brown-winged *Saurita* with the discoidal patch darker and extending somewhat along the cubital veins. Males and females similar except for the longer pectinations on the male antennae.

Material.—One male.

Range.—Venezuela to Argentina.

Saurita clusia (Druce)
(Pl. III, figs. 22, 23)

Laemocharis clusia Druce, 1897: 303.

Hypocharis clusia, Hampson, 1898: 271, fig. 125.

Hypocharis clusia, Draudt in Seitz, 1915: 91, fig. 15e.

Hypocharis clusia, Kaye & Lamont, 1927: 4.

Saurita clusia, Forbes, 1939: 121.

Forbes (1939: 121) placed *clusia* in *Saurita,* pointing out that the character Hampson (1898: 271) employed to erect the genus *Hypocharis* is equally true of *Saurita,* namely, vein M_1 of

the forewing is more or less from below the angle of the cell in all species of *Saurita* as well as Hampson's *Hypocharis*.

This species will key to *Saurita nox* (Druce) in Hampson's key (1898: 275). Hampson's footnote indicates that he examined the holotype of *nox* which was in the Staudinger collection. In his description of the species he mentions "a broad diffused whitish band from just beyond middle to termen." He gives the wing expanse as 22 mm.

Druce, on the other hand, neither in his original description (1896: 30) nor in the *Biologia* (1897: 341, pl. 71, fig. 11) where he copies his original description, makes any mention of a whitish postmedian band but states simply, "primaries and secondaries smoky hyaline, with the veins all black." His figure (*l.c.*) illustrates a smoky hyaline-winged moth with blackish veins. Druce records the wing expanse as 1¼ inches.

Draudt in Seitz (1915: 93, fig. 15g) shows a figure resembling the figure of Druce. Forbes conjectures that Draudt's figure is of *S. fumosa*. In his description, however, Draudt writes of a "postdiscal, faded, whitish spot." He gives the wing expanse as 22 mm. He compares the species to *Saurita lacteata* Butler which has a different-shaped inner margin of the hindwing. (See Forbes, *l.c.* for grouping of species of *Saurita*).

Hampson (1914: 186) synonymizes *Chrostosoma maratha* Druce as the female of *Saurita nox*. The holotype is in poor condition with the wings torn and rubbed and the abdomen missing. However, the whitish postdiscal band crosses the forewing in the photograph slightly distad of the discoidal veins. The facies of the forewing looks very similar to that of *clusia*.

Specimens from Trinidad are included within the series of *Saurita clusia* in the British Museum (Natural History) collection. These Trinidad specimens and also those in Kaye's private collection under *clusia* are similar to the specimens we collected. However, if I were to follow my interpretation of Forbes (1939: 121) I should have identified them as *nox*. Forbes states that *clusia* is smaller than *nox*, the white postmedial band narrower sex for sex, and the blue spotting is distinctive, and for *nox*, "There are no blue spots; in the male the white area invades the outer third or half the cell, in the female the extreme apex of the cell may be pale." First of all, our series of specimens varies from having a distinctively blue spotted abdomen to a completely unspotted concolorously colored abdomen with the completely unspotted section representing approximately half the collection. Our specimens are much larger than the specimens in the American Museum of Natural History from Panama identified as *clusia* by Forbes. All of our specimens have the postmedial band invading the discal cell to the extent of half or more. Lastly, our specimens differ in genitalia from those in the American Museum under *clusia*.

Hampson (1898: 271) mentions the blue spotting in regard to *clusia*. His figure of *clusia* is similar to our photograph of the holotype of *clusia*, but his wing expanse is much larger (30 mm.) (and Druce 1¼") than the six specimens named *clusia* by Forbes (23-25 mm.) in the American Museum of Natural History. In other than the size difference, Hampson and Forbes agree.

Aside from the discrepancy between Druce's original description of *nox* and the subsequent descriptions by other authors which make the identity of *nox* questionable, it is quite possible that we are concerned with more than two species. However, I consider that it would be unwise to describe the Trinidad form without having material throughout the range of the above two species.

Saurita lacteata (Butler)

Dycladia lacteata Butler, 1877: 34, pl. 17, fig. 3.
Saurita lacteata, Hampson, 1898: 276, fig. 128.
Saurita lacteata, Draudt in Seitz, 1915: 93, fig. 15g.
Saurita lacteata, Kaye & Lamont, 1927: 4.

This species is listed by Kaye & Lamont as occurring in Trinidad but the specimens in Kaye's collection under this name are similar to the following new species. The specimens under *lacteata* in the British Museum (Natural History) from Trinidad are likewise in agreement with the following species. Butler describes *lacteata* from the Rio Jutahi, Amazons.

Saurita **arimensis**, new species
(Pl. I, fig. 3; Pl. II, fig. 3)

Length of forewing of male 10.5-11.5 mm.

Related to *Saurita lacteata* Butler from which *arimensis* differs in having the discal cell hyaline and in not having a yellowish-white patch below the cell and another yellowish-white patch beyond the cell.

Antennae bipectinate in the male with each pectination dilated and bristled on the distal end. Palpi brown, reaching vertex of head with fan-shaped brown tuft on first segment. Whole head uniform brown.

Patagia and disc of thorax uniform brown with a small white patch on the mid-dorsum of the metathorax. Tegulae brown with a crimson patch on anterior margin near patagia (shoulders) and a white bar at discal edge of tegulae on the anterior margin of forewing. The inner half of tegulae along the disc of the thorax crimson.

Some white on the outer edge of the basal half of the forecoxae on the episternum (2nd). The remainder of the legs and the lateral and ventral parts of the thorax brown.

Fore- and hindwings hyaline. Veins brown. The forewings narrowly bordered with brown but the apex of the wings broadly brown. The brown patch at the apex extending within the wing to the point where veins R_4 and R_5 fork. A relatively broad brown discal bar (1.25 mm.). Hindwings with narrow brown margins broadening at apex. At the 1st anal fold the brown color extends within the wing for approximately one-third of the length of the wing from the margin, and a brown patch extending into the wing at the anal angle for approximately the same distance.

Abdomen with the dorsum of the first and second segments and to a variable extent the third segment creamy white. The bullae creamy white. A creamy white band extends from bullae along the spiracular region of the abdomen for four segments. The band is broadest at the base and narrows toward the distal end of the abdomen. The remainder of the abdomen brown.

The name *arimensis* has been taken from the type locality, Arima Valley.

Material.—All types were taken at Simla, Arima Valley, Trinidad. Holotype, male, Catalog No. 57200, 2-V; 6 paratypes, (57201) 2-VI, (57202) 16-III, (57203) 21-IV, (57204) 13-II, (57205) 7-I, (57206) 3-VI.

Disposition of type material.—The Department of Tropical Research, New York Zoological Society, will retain two paratypes, Catalog Nos. 57205 and 57206. Paratype, Catalog No. 57204, is in the collection of the British Museum (Natural History) and paratype, Catalog No. 57203, is in the United States National Museum collection. The holotype, Catalog No. 57200, and the paratypes, Catalog Nos. 57201 and 57202, are in the American Museum of Natural History.

Saurita perspicua Schaus

Saurita perspicua Schaus, 1905: 187.

Saurita perspicua, Hampson, 1914: 185, pl. IX, fig. 31.

Saurita perspicua, Draudt in Seitz, 1915: 93, fig. 28e.

Saurita perspicua, Kaye & Lamont, 1927: 4.

This species has not been collected since the original type. Subsequent mention in the literature has been based on the original description. The type is a female in the U.S. National Museum. Schaus (1905) states that the wings are smoky hyaline and Hampson (1914) simply says that they are hyaline. We have not taken this species at Simla.

Range.—Trinidad.

Saurita salta (Schaus)

Thrinacia salta Schaus, 1894: 226.

Saurita salta, Hampson, 1898: 277, pl. X, fig. 12.

Saurita salta, Draudt in Seitz, 1915: 94, fig. 15h.

Saurita salta, Kaye & Lamont, 1927: 5.

Range.—Described from Venezuela. Kaye & Lamont report it from Trinidad, with no data.

Saurita temenus (Stoll)

Sphinx temenus Stoll, 1781: pl. 367, D.

Saurita temenus, Hampson, 1898: 279.

Saurita temenus, Draudt in Seitz, 1915: 94, fig. 16b.

Saurita temenus, Kaye & Lamont, 1927: 5.

See following species, *Saurita afflicta,* for discussion.

Range.—Surinam, Amazons.

Saurita afflicta (Walker)
(Pl. III, figs. 24, 25)

Glaucopis (*Pseudomya*) *afflicta* Walker, 1854: 144.

Glaucopis afflicta, Butler, 1877: 29, pl. 7, fig. 12.

Saurita temenus, Hampson, 1898: 279 (in part).

Saurita venezuelensis Klages, 1906: 538.

Saurita venezuelensis, Draudt in Seitz, 1917: 94, fig. 15h.

Saurita temenus, Draudt in Seitz, 1917: 94, fig. 16b (in part).

Saurita afflicta, Forbes, 1939: 123.

The *Saurita temenus* record of Kaye & Lamont (1927: 5) may be in error and their specimens rightfully placed in this species. The specimens we have taken at Simla are *S. afflicta.* This species was listed by Hampson (1898: 279) as a synonym of *S. temenus* and subsequent authors until Forbes (1939: 123) followed Hampson. Forbes was the first to point out that the two names represented different species most easily separated by the yellow ventrum of *S. temenus* and the blackish ventrum of *S. afflicta.*

However, since *S. afflicta* was described from the Amazons and *S. temenus* from Surinam, it is possible that both species inhabit Trinidad.

The females may be distinguished from the males by having the spaces between the veins beyond the cell hyaline.

Material.—17 specimens: 12 males and five females.

Range.—Honduras to the Amazons.

Saurita concisa (Walker)

Euchromia concisa Walker, 1854: 243.

Thrinacia afflicta Druce, 1884: 56 (not Walker).

Saurita concisa, Hampson, 1898: 279.

Saurita thoracica Klages, 1906: 538.

Saurita concisa, Hampson, 1914: 189.

Saurita thoracica, Draudt in Seitz, 1915: 94.

Saurita concisa, Kaye & Lamont, 1927: 5.

Kaye & Lamont placed *Saurita venezuelensis* Klages as a synonym, but I have followed Forbes and synonymized *venezuelensis* under *Saurita afflicta* Walker.

Kaye & Lamont record this species from Palmiste, Trinidad, but we have not collected it as yet at Simla.

Range.—Panama to the Amazons.

Psoloptera Butler

A small genus closely related to *Saurita,* from which it differs by having vein R_1 forked with R_2 in the forewing.

Psoloptera leucosticta (Hubner)

Glaucopis leucosticta Hubner, 1827: t. 162.

Psoloptera leucosticta, Hampson, 1898: 285.

Psoloptera leucosticta, Draudt in Seitz, 1915: 96, fig. 15 m.

Psoloptera leucosticta, Kaye & Lamont, 1927: 5.

Kaye & Lamont report this species from Trinidad, one specimen from Guaico at the southern foot of the Northern Range and two specimens from Palmiste. We have not taken it at Simla, but we collected the species at Caripito, Venezuela, across the Gulf of Paria from Trinidad. The wings and body are purplish-black with two white points at the base of the abdomen.

Range.—Venezuela, Trinidad, Guianas and Amazons.

Dycladia Felder

A small genus of moths that are very beetle-like. The following species in particular, like the species of the genus *Correbidia* in the next subfamily, resemble a Lycidae beetle.

1. Orange lateral line of the abdomen not reaching beyond middle of the abdomen and no black spot at the base of the forewing ..... *correbioides*

   Orange lateral line of the abdomen absent only on the last segment and base of forewing with large black spot... *basimacula*

Dycladia correbioides Felder

Dycladia correbioides Felder, 1874: pl. 102, fig. 20.

Dycladia correbioides, Hampson, 1898: 293, fig. 139.

Dycladia correbioides, Draudt in Seitz, 1915: 99, fig. 16d.

Dycladia correbioides, Kaye & Lamont, 1927: 5.

Kaye & Lamont record this species from Palmiste but see following species, *Dycladia basimacula* Schaus.

Dycladia basimacula Schaus
(Pl. III, fig. 26)

Dycladia basimacula Schaus, 1920: 9.

It is most likely that the *D. correbioides* of Kaye & Lamont is this species. *D. correbioides* is the name used for the form found in Colombia and Panama, and *D. emerita* for the form from Costa Rica to Mexico. Schaus described *D. basimacula* from Venezuelan and Trinidad material.

Material.—Four males.

Range.—Trinidad and Venezuela.

Syntomeida Harris

The three posterior veins from the discal cell of the hindwing are forked.

Syntomeida melanthus (Cramer)

Sphinx melanthus Cramer, 1779: pl. 248, C.

Sphinx nycteus Stoll, 1780: pl. 325, F.

Euchromia apricans Walker, 1854: 224.

Syntomeida albifasciata Butler, 1876: 366.

Syntomeida melanthus, Hampson, 1898: 306, fig. 138.

The lustrous blue-black wings with a variable number of quadrate yellow spots and orange-red and black bands on the abdomen separate this insect from other Trinidad ctenuchids. The names *albifasciata, nexilis* and *nycteus* apply to variants in either the number of yellow wing spots or abdominal coloration.

Kaye & Lamont report this species from San Fernando.

Range.—Mexico to Uruguay and Peru.

Histiaea Walker

The largest of the Trinidad ctenuchids, with densely scaled, brown wings variously marked with red and yellow or grayish spots.

1. Abdomen with two basal segments completely yellow dorsally. Forewing with extensive longitudinal red rays running from base ..... *meldolae*
   Dorsum of abdomen brown with two subdorsal spots on basal segment, and triangular, subdorsal yellow spots on the anterior parts of the following two segments. Forewing with at most red or reddish-tinged spots or small streaks..... *cepheus*

Histiaea meldolae Butler
(Pl. III, fig. 27)

Histiaea meldolae Butler, 1876: 362.

Histiaea meldolae, Druce, 1884: 42, pl. 6, fig. 14.

Histiaea meldolae, Hampson, 1898: 311.

Histiaea meldolae, Draudt in Seitz, 1915: 101, fig. 16g.

Histiaea meldolae, Kaye & Lamont, 1927: 5.

Material.—Three males and three females.

Range.—The holotype is a Trinidad specimen. British Guiana, Venezuela, and Panama.

Histiaea cepheus (Cramer)
(Pl. III, fig. 28)

Histiaea cepheus Cramer, 1780: pl. 109, E.

Histiaea cepheus, Hampson, 1898: 313.

Histiaea monticola Klages, 1906: 538.

Histiaea monticola, Hampson, 1914: 203.

Histiaea cepheus, Draudt in Seitz, 1915: 101, fig. 16g.

Histiaea monticola, Draudt in Seitz, 1915: 102.

Histiaea cepheus, Kaye & Lamont, 1927: 6.

Material.—Forty-six males and 17 females.

Range.—Venezuela to Surinam.

Macrocneme Hubner

This genus of iridescent wasp-like moths is in a very confused condition. The iridescence of the wings, while diagnostic in many instances, is extremely difficult to describe. Forbes (1939) has written the only paper that is of any real assistance. The descriptions in Hampson (1898 and 1914) are valuable but his taxonomic treatment is inadequate. Genitalic studies of the types and series of specimens must be made and associated with other characters before identification in this genus will have any reliability.

The following key is based on specimens we have collected and some unidentified Trinidad material loaned by the British Museum (Natural History).

1. First segment of abdomen with four white spots; two subdorsal and two lateral. No ventral valve in male. Large species with a wing length of 16 mm. or more..... 2
   First segment of abdomen with only two iridescent blue or green subdorsal spots on conspicuous abdominal bullae. Ventral valve present in male. Smallest species with a wing length of 14 mm. or less 6
2. Males 3
   Females 5
3. At least the basal ⅔ of the ventrum of the abdomen with a broad uninterrupted white band ..... *thyra*
   Otherwise; white of underside of the abdomen broken up into spots..... 4
4. Forecoxae iridescent blue..... species?
   Forecoxae white ..... **spinivalva**
5. Iridescence of the forewing uniform green to end of discal cell except slight black along base of costal margin and small black point on the base of the anal vein. (True of males also)..... *thyra*
   Iridescence of forewing interrupted by a black band from inner margin to at least the anterior part of discal cell. (True of males also) ..... **spinivalva**
6. Forewing with streaks of iridescent blue or green from base of wing to end of discal cell ..... *vittata*
   Forewing with only blue or green spots at base of wing 7
7. Abdomen with subventral white spots on two medial segments ..... *plumbea*
   Abdomen without subventral white spots *albitarsia*

Macrocneme plumbea (Hampson), new combination
(Pl. III, fig. 29)

Poliopastea plumbea Hampson, 1898: 337, pl. XII, fig. 26.

Poliopastea plumbea, Draudt in Seitz, 1915: 110, fig. 18b.

Our specimens agree with Hampson's original description of *plumbea* but the description is inadequate for proper determination. Hampson states that the abdominal valve is blue edged

with white, with a white patch behind it. Our specimens have these characters, but in addition the two segments caudad of the white patch have small subventral white spots. Draudt in Seitz may have had similar specimens, as he states: "—the next rings indistinct, white sublateral spots." Kenedy, in notes, writes that the type has small, sublateral spots on the next segment and sublateral metallic blue spots on next two segments. One of our specimens shows only faint traces of the second pair of spots. All of our specimens have subventral blue spots on the subterminal abdominal segments but they may be very faint. The hind legs are missing on the holotype, but in the series of specimens of *plumbea* (not type material) in the British Museum (Natural History) the hind tarsi are white. Hampson's male holotype came from the lower Amazons, Paratins. Draudt records the species from the Amazon and French Guiana, and specimens in the British Museum (Natural History) collection are from Trinidad, Venezuela, British Guiana and Sao Paulo, Brazil. My identification of the Trinidad material is provisional on a genitalic examination of the holotype in the British Museum.

Hampson erected a new genus, *Poliopastea,* for *plumbea* and made *plumbea* the type species of the genus. Hampson's conception of the differences between *Macrocneme* and *Poliopastea* appears to be the porrect palpi in *Poliopastea,* veins Cu_1, M_3 and M_2 of the forewing close to the angle of the cell and vein R_2 of the forewing from the cell. The specimens that I have seen from Trinidad have individuals with both porrect and upturned palpi. Vein Cu_1 of the forewing is variable in *Macrocneme* so that the character, veins Cu_1, M_3 and M_2 from close to angle of cell, has no significance and some species of *Macrocneme* have vein R_2 of the forewing from the cell. Consequently, I consider *Poliopastea* a synonym of *Macrocneme.* I have not examined any of the other species that have been placed in *Poliopastea* but it seems likely that *obscura* (Wallengren) and *viridis* (Druce) can be included in *Macrocneme.* Hampson (1914: 207) placed *ochendeni* Rothschild in *Macrocneme.* He erected a new genus *Pseudophaio* for *rosenbergi* Rothschild and provisionally transferred *verdivittata* to *Calonotus. Poliopastea pava* (Dognin) was aberrant in the genus and required a separate section. It was originally described by Dognin in the genus *Thysanopryana,* which is a synonym of *Baritius* in the family Arctiidae.

Kaye & Lamont listed *plumbea* as a synonym of *eacus* along with *vittata* and *nigritarsia.* The figure of *eacus* in Stoll (1781, fig. 335 C) has evanescent, iridescent blue in the cell and somewhat beyond, and *vittata* (see above under *vittata*) has iridescent blue above and below the cell as well as within the cell. Hampson's *nigritarsia* is a larger moth than *eacus* and the iridescent blue is more distinct and extensive. Lamont & Callan (1950: 197) report *albitarsia* from Trinidad (Palmiste). This species may be separated from *plumbea* by the absence of the white spots on the ventrum of the abdomen. Both *eacus* and *nigritarsia* have black hind tarsi, whereas *albitarsia, plumbea* and *vittata* have the terminal segments of the hind tarsi white.

Material.—Four males from Simla and two males from the British Museum (Natural History) from Caparo and San Fernando, Trinidad.

Macrocneme thyra thyra Moschler

Macrocneme thyra Moschler, 1883: 334, 1. 18, fig. 24.

Macrocneme thyra, Hampson, 1898, 321.

Macrocneme thyra, Draudt in Seitz, 1915, 103, fig. 17a.

Macrocneme albiventer Dognin, 1923: 2.

Macrocneme thyra, Kaye & Lamont, 1927: 6.

Macrocneme thyra, Forbes, 1939: 129, 1. 1, fig. 3 (genitalia).

This is the nomenclatural type that was described from Surinam. One male specimen from the collection in the British Museum (Natural History) I have tentatively assigned to this form. It was collected at Tabaquite, Nariva District, Trinidad. This single specimen has a very short streak of iridescent blue at the base of the wing in the lower part of the cell and just below the cell. Iridescent blue in the distal half of the cell, just above the cell and below the anal vein, the latter extending almost to the base of the wing. The area between the cell and the anal vein black but with a trace of iridescence below the iridescence in the cell end. This specimen has more extensive black in the basal part of the wing than Hampson indicates for *thyra.* The ventrum of the abdomen is white. While I have not removed the genitalia, it is well extruded and I have been unable to see any significant difference between the genitalia of this specimen and the genitalia of *thyra* that Forbes (1939) figures, and the following race.

Range.—Guianas, Brazil, Peru to Panama?

Macrocneme thyra intacta Draudt
(Pl. III, fig. 31)

Macrocneme thyra, subspecies 1, Hampson, 1898: 321.

Macrocneme thyra intacta, Draudt in Seitz, 1915: 103.

I am unable to find any essential details of the genitalia of the Trinidad specimens different from the genitalic figures of Forbes (1939). Both processes of the male valves are curved as in the figure and the upper process of the left valve has a distinct tooth on the inner edge. This last feature is not shown in the figure but stated in the text. The juxta is squarely cut off and short. The uncus is the same shape as in the figure, but with small, narrow, lateral-winged margins which I do not see in the figure.

This is subspecies 1 of Hampson. Draudt appears to have given the subspecies a name on the basis of Hampson's description without having specimens before him. Hampson (1898) characterized it in part by stating "Forewing with blue-green at base entire." This is true of our Trinidad specimens except as noted in the key; namely, the Trinidad specimens have black on the base of the costal margin and a small black streak or spot on or near the base of the anal vein. This last-mentioned black streak or spot is never very conspicuous and is occasionally absent.

Material.—144 specimens from Simla (137 males and 7 females) and 9 specimens (6 males and 3 females) from Port of Spain, Guaico, Ariapite Valley and St. Ann's borrowed from the British Museum (Natural History).

Range.—Stated by Hampson as Trinidad and Colombia.

Macrocneme **spinivalva,** new species
(Pl. I, fig. 4; Pl. II, fig. 4)

Length of forewing of male 17 mm., of female 18 mm.

Antennae dark brown, bipectinate. Each pectination tufted on distal end and length of pectinations rapidly decreasing at proximal and distal ends of antennal shaft. Pectinations shorter in male than in female.

Palpi upturned to vertex of head. First segment of palpi clothed with ragged, dark brown scales with an immaculate white medial tuft of broad scales on anterior face, for two-thirds to three-quarters the length of the second segment of the palpi from the proximal end. The line of white scales absent in female. Ground color of second and third palpal segments dark brown in both sexes.

Front of head dark brown with two white spots on upper edge beneath the antennal scapes in both sexes. Vertex of head brown.

Patagia (collar) with a pair of dorsal white spots and a pair of subdorsal white spots. In the male, but not the female, each dorsal spot joined to its respective subdorsal spot by a fine line of white scales on the anterior margin of the patagia. Immediately below the subdorsal spots and hardly separated from them, anterior to the bases of the tegulae and approximately in line with the middle of the eyes, a small white spot. A rectilinear episternal white spot in line with the lower part of the eyes and base of palpi. The episternal spot is present in the female though usually smaller than in the male, but the spot below the subdorsal spot is absent in the female. Tegulae dark brown with iridescent green reflections most pronounced on the anterior edge. Dorsum of thorax dark brown with iridescent reflections in various lights, most distinct on the metathorax.

Forecoxae of the male white but the remainder of the forelegs brown with faint iridescent reflections except for the caudal edge of the femur of the forelegs which is gray. Each of the forecoxae of the female with two small white spots on the proximal end, one laterad and one dorsad. The remainder of the female legs brown with varying iridescent reflections. Mesothoracic legs in both sexes brown with some blue reflections, with a small white spot on the distal end of the femur. Metathoracic legs of the same brown color with reflections but with the distal one-half to two-thirds of the tibia in both sexes fringed. The metatarsus with long fringe. The fringe on the third, fourth and fifth tarsal segments white.

Forewing with two white spots on base of wing near tegulae. Distinct blue iridescence in the forewing is confined to the following five areas:

(1) A streak the length of the discal cell above the discal cell,

(2) to the distal half of the discal cell,

(3) to the same respective part of the wing below the discal cell except that the iridescence follows vein Cu_2 in the direction of the tornus a little beyond the end of the discal cell,

(4) a basal patch below the base of the discal cell, and

(5) a median streak below the anal vein.

The remainder of the wings including the veins through the iridescent areas blue to brownish-black depending on the age of the specimen. The above description of the forewing pattern may be summarized by saying that the iridescence is confined to the plane of the end of the discal cell interrupted by a dark transverse band perpendicular to a dark anal streak. Underside of forewing with the basal half of the wing to cell end iridescent blue.

Upperside of hindwing bluish or brownish-black depending on the age of the specimen. Underside of hindwing iridescent blue except

for apical and anal area. In old specimens the iridescence may be restricted to the cell and costal area.

Abdomen with two pairs of white spots, one pair subdorsal and the other on the hoods or bullae. First segment of abdomen blackish-brown and the remainder of the abdominal segments iridescent blue-green with bluish-black subdorsal longitudinal bands. The background color may become quite brassy in old specimens. Ventrum of male without a basal ventral valve but a pair of subventral white spots on the first segment in both sexes. Subsequent segments of the abdomen in both sexes with a midventral white spot except the last abdominal segment which, like the first segment, has a pair of white subventral spots.

Male genitalia with base of uncus broadly inflated and the edges thin in cross-section with the distal process normally directed ventrally and slightly spatulate. Valves large with two processes, the dorsal process curved with a distinct thorn-like structure on inner edge of the distal half and a ventral process which is slender and hirsute. Juxta very slender, so slender as to be remarkable for the genus.

Female genitalia with signa of bursa copulatrix spherical, with long spines, sea-urchinlike, with small anterior portion unspined. In the female genitalia of *thyra,* the other species of this section of the genus in Trinidad, the signa is ovoid or almost subquadrangular with short spines.

This is most likely the species mentioned by Forbes (1939: 126, pl. II, fig. 8) which he refers to as *Macrocneme* species. It will run to this species in his key to the species of *Macrocneme* and his figures are extremely similar. The tegumen and uncus are less inflated laterally than in *spinivalva* and do not show any part of the distal end of the uncus. The thorn or tooth on the dorsal process of the valve appears more pronounced and acuminate than in Forbes's figure of the valve, but this may be a matter of perspective.

This species seems to be most closely related to *thyridia* with which we had it confused in our collection. The tooth or thorn-like structure on the upper process of the valve and extremely slender juxta will separate *spinivalva* from *thyridia.* The spined condition of the valve can often be seen without removing the genitalia in the male. Thus far, we have not found *thyridia* in Trinidad.

The specific name *spinivalva,* meaning thorn-valve, refers to the thorn-like structure on the upper process of the male genitalic valve.

Material.—Holotype, male, Catalog No. 5716, Simla, Arima Valley, 27-III; allotype, female, Catalog No. 5717, Simla, 26-III; paratypes, male and female in coitu, (5718) Simla, 22-XII; paratypes, males, (5719) Simla, 16-II—(5720) #288, Trinidad, B.M.—(5721) June, 1902, Ariapite Valley, B. M.—(5722) June, 1902, Ariapite Valley, Trinidad, B. M.; paratypes, females, (5345) Simla, 17-III—(5724) Simla, 6-III—(5725) Simla, 27-III—(5726) Simla, 13-III—(5727) Trinidad, B. M.—(5728) Trinidad, B. M. —(5729) Trinidad, Dr. Jackson, 1921-1922, B. M.—(5730) Trinidad, A. Hall, Feb. 1930, B. M.—(5731) Ariapite Valley, July, 1902—(5732) Trinidad, B. M.—(5733) Trinidad, B. M.—(5734) Trinidad, F. Shade, Nov. 1920, B. M.—(5735) Trinidad, B. M.—(5736) Trinidad, B. M.

Disposition of type material.—The Department of Tropical Research, New York Zoological Society, retains the two paratypes in coitu (5718). Those paratypes listed above with abbreviation "B.M." are specimens borrowed from the British Museum (Natural History) and have been returned to England. Paratype 5723, female, is in the United States National Museum collection. The holotype, allotype and the remaining paratypes are in the American Museum of Natural History, New York.

Macrocneme vittata Walker
(Pl. III, fig. 30)

Macrocneme vittata Walker, 1854: 249.

Macrocneme vittata, Hampson, 1898: 249, Pl. XII, fig. 23.

Macrocneme nigritarsis, aberration 1, Hampson, 1898: 326.

Macrocneme caurensis Klages, 1906: 540 (after Hampson: 1914: 207).

Macrocneme vittata, Draudt in Seitz: 1915: 105, fig. 17d.

Macrocneme nigritarsis, aberration *trinitatensis,* Strand, 1917: 84.

Macrocneme vittata, Forbes, 1939: 127, 133.

This species has not been reported by Kaye & Lamont. They did, however, list it as a synonym of *eacus* (Stoll). *Macrocneme eacus* does not seem to have been found in Trinidad. It is a small *Macrocneme* with a suffused bright blue forewing in contrast to *vittata* which has definite if variable iridescent blue marks. The latter seems closely related to *alesa* Druce, which differs in having more green than *vittata.* The costal green of *vittata* extends but little beyond the discal cell from the base, whereas in *alesa* it runs to near the termen. The blue streak on the anal vein extends beyond the middle of the wing in *alesa,* but in *vittata* from Trinidad this streak in the

specimen with it most enlarged is still only half the length of the discal cell. This species will key to *alesa* in Hampson (1898: 322) since in the key *vittata* is separated on the basis of having green only in and above the cell, which is contrary to what Hampson states in his description (1898: 325). Forbes (1939: 127) similarly has *vittata* restricted to blue in costal half or less. The amount of blue in our specimens is variable in the anal region of the forewing; from only a spot near the base of the wing to streaks above and below the anal vein reaching to approximately the end of the discal cell, above the anal vein (origin of vein Cu_2) and half the length of the discal cell below the anal vein. The holotype of *alesa* is a female from Bolivia and the holotype of *vittata* from Para, Brazil.

Hampson (1898: 326) on the basis of one female specimen identified as *nigritarsia*, described an aberration from Trinidad distinguished by having white sublateral spots on the four medial segments of the abdomen. Hampson did not mention in his description that this specimen has some white on the tarsi, which has been seen by Kenedy. Later Strand (1917: 84) named this aberration of Hampson *trinitatensis*. Hampson's female specimen can hardly be anything else than a normal *vittata* female, and thus, since the Trinidad locality record for *nigritarsis* appears to be dependent on this single specimen, *nigritarsis* cannot be considered as having been taken in Trinidad.

Material.—Nine specimens (5 males and 4 females). Thirty specimens (14 males and 16 females) in the British Museum (Natural History). One from Caparo, four from Ariapite Valley and the remainder labelled only Trinidad.

Range.—Amazons and Venezuela (*caurensis*).

Calonotos Hubner

Key to the Trinidad Species of *Calonotos*

1. Wings without hyaline spots . . *helymus*
   Wings with hyaline spots 2
2. Abdomen cupreous with black stripes . . . . . *tiburtus*
   Abdomen iridescent green with black stripes 3
3. Basal segment of abdomen black with a pair of subdorsal white spots and lateral hoods white . . . . . *craneae*
   Basal segments of abdomen green without a pair of white spots, but with dorsal black stripes and lateral white hoods . . . . . *tripunctatus*

Calonotos helymus (Cramer)

Sphinx helymus Cramer, 1775: I, pl. 2, figs. D, E.

Glaucopis aterrima Sepp, 1848: p. 17, pl. 97.

Calonotos helymus, Hampson, 1898: 335.

Calonotus helymus, Draudt in Seitz, 1915: 109, fig. 18a.

Calonotus helymus, Kaye & Lamont, 1927: 7.

This species was collected at Palmiste by Lamont. We have not collected it in the Arima Valley as yet. Hampson in his key (1898: 333) states, "Wings without hyaline spots," which separates this species from all other *Calonotos* collected to date from Trinidad. Draudt's figure in Seitz (1915: 18a) has a single hyaline spot in the discal cell area of the forewing, although his text states that the wings are unspotted.

Range.—French and British Guiana.

Calonotos tiburtus (Cramer)
(Pl. III, fig. 32)

Sphinx tiburtus Cramer, 1780: pl. 237C.

Calonotos tiburtus, Hampson, 1898: 333, fig. 154.

Calonotus tiburtus, Draudt in Seitz, 1915: 108, figs. 17i ♂ & ♀.

Calonotus tiburtus, Kaye & Lamont, 1927: 6.

The bright, metallic coppery stripes on the abdomen serve to distinguish this species from other *Calonotos* of Trinidad. We have found the species quite common flying in the daytime in forested parts of the Nariva Swamp south of Brigand Hill. Male genitalia with a pair of lobe-like processes at base of uncus. Uncus curved ventrally and tapering abruptly to a point at distal end. Dorsal edge of harpe sharply curved ventrally at distal end to form a large ventral process and from inner edge of dorsal edge of harpe a smaller terminal process. From near the base of the harpe on the ventral edge a long slender process. Scoup (juxta?) curved dorsally at end and terminating in a thorn-like spine preceded by a pair of double-pointed thorns. Aedeagus terminating in two long but unequal spines.

Strand (1915: 25), on the basis of a male and two females collected in Trinidad, named a local form *trinidadensis*. The description simply states "Without white spots on the palpal base and on the thorax. Wing expanse 41, length of forewing 20 mm. female."

Materials.—Two male specimens were collected on May 5 and June 17 at Simla.

Range.—Costa Rica to Surinam.

Calonotos **craneae,** new species
(Pl. I, fig. 5; Pl. II, fig. 5)

Length of forewing of males and females average 19-20 mm. Females average but slightly larger than males.

Antennae of male bipectinate with the distal end of each pectination dilated and bristled. The pectinations on each side of the antennal shaft subequal. In the female the antennae are similar, but the pectinations are shorter than in the male and the pectinations on the inside of the antennal shaft of the female are very short in comparison with the pectinations on the outer side of the antennal shaft. Antennae in both sexes with the pectinations decreasing in size towards the apex of the shaft. The dorsal side of the distal end of the antennal shaft white (approximately the distal fifteen segments) but with the terminal one or two segments brown.

Palpi normal in shape and position for the genus. The fan-shaped tuft on the base of the first segment of the palpi concolorous brown, as well as the three palpal segments.

Front of head blackish-brown with two white spots on upper lateral edges below antennae. Vertex of head, collar, tegulae, thorax and legs concolorous dark brown. A small amount of white on the distal end of the hindcoxae in both sexes but smaller and less conspicuous in the female. In some lights there is a slight bluish-green reflection from the dark brown of the various structures mentioned above.

Forewings blackish-brown. Typically with three white spots, one elongate spot below the middle of the discal cell, a subspherical spot beyond the cell bordering on the discoidal veins proximally and between vein M_1 and vein M_2 and a third spot between veins Cu_1 and Cu_2. However, this last-mentioned spot is always smaller in the males than in the females and may be absent, although usually a few white scales persist. In addition, in one female this same spot is so enlarged as to extend half way between veins Cu_2 and M_3. A short iridescent blue sub-basal streak on upper edge of basal third of cell but not extending to base of wing. In two males and one female there is a short iridescent blue steak within the basal part of the discal cell.

Hindwing concolorous black-brown with one white hyaline spot beyond the cell.

Underside of forewing concolorous dark brown except for the inner margin below the anal vein which is light brown. The underside of the hindwing concolorous dark brown with iridescent blue-green patches above and within the discal cell. The whitish-hyaline spots on the upper side of the wings are present on the underside of the wings.

Abdomen shining iridescent, silvery blue with two longitudinal subdorsal black-in-brown stripes. The basal segment black-brown with two gray or whitish subdorsal spots. These spots are seldom conspicuous and may be all but absent. Two lateral white spots on bullae which are larger than the subdorsal spots. A narrow blackish-brown lateral stripe with a very narrow stripe below of iridescent silvery blue ground color. This silvery blue stripe diminishes and finally disappears on the terminal segments of the abdomen. The ventral surface of the abdomen blackish-brown with a midventral white stripe. This white stripe is always present but is stronger in some specimens than others.

Male genitalia massive and symmetrical. A pair of appendages arises cephalad and dorsad of the uncus. These processes extend caudally beyond the uncus and have a lobe-like structure subventrally at their bases. The base of the uncus is in the plane of the tegumen, but the uncus narrows and bends ventrally at right angles for a distance longer than its horizontal length. The harpe with two processes. One process long and slender with long hair on its ventral edge produced from the ventral edge of the harpe. The ventral edge of the harpe narrows abruptly after this process to produce just before the terminus of the harpe a small slender process directed ventrally. Scoup (juxta ?) long, broad and massive, terminating in two long processes bent at right angles in a dorsal direction.

Most closely related to *triplagus* Hampson and *chalcipleurus* Hampson. In both of these species, as in *craneae,* the iridescent blue middorsal line commences at the anterior edge of the second abdominal segment rather than at the anterior edge of the first abdominal segment which is characteristic of *tripunctatus.* The wing expanse of the holotype of *triplagus* is 38 mm. as against 42-45 mm. of *craneae.* The collar of *triplagus* has paired white spots while *craneae* is concolorous black-brown. The dorsum of the thorax is spotted metallic green in *triplagus* but is immaculate black-brown in *craneae.* The coxae and extremities of the femora are spotted white in *triplagus* and unspotted in *craneae.* The hyaline white on the wings of *triplagus* and *craneae* appear to be similar. The type locality of *triplagus* is Manaos, Brazil. The legs and thorax are also spotted white in *chalcipleurus* and the dorsum of the thorax with golden green spots, contrary to *craneae* in which these areas are black-brown. The pectinations of the antennae appear to be longer in *chalcipleurus* than in *craneae.* The ventrum of the abdomen with a series of white spots in *chalcipleurus,* whereas in *craneae* it has a ventral white stripe. Hampson

gives the wing expanse of *chalcipleurus* as 46 mm., which is considerably larger than *craneae*.

I take pleasure in naming this species after Jocelyn Crane, Assistant Director of the Department of Tropical Research, New York Zoological Society.

All of the type material was collected at Simla, Arima Valley, Trinidad. Holotype, male, Catalog No. 5656, I-VI; allotype, female (5657) 25-IV; paratypes, 29 males, (5658) 3-I, (5659) 7-I (5660) 11-I, (5661) 11-I, (5662) 12-III, (5663) 27-III, (5664) 2-IV, (5665) 2-IV, (5666) 3-IV, (5667) 6-IV, (5668) 8-IV, (5669) 16-IV, (5670) 18-IV, (5671) 25-IV, (5672) 25-IV, (5673) 27-IV, (5674) 29-IV, (5675) 1-V, (5676) 2-V, (5677) 4-V (5678) 7-V, (5679) 8-V, (5680) 10-V, (5681) 12-V, (5682) 12-V, (5683) 13-V, (5684) 13-V, (5685) 28-V, (5686) 1-VI; 23 females, (5687) 7-I (5688) 5-II, (5689) 13-II, (5690) 20-II, (5691) 27-II, (5692) 28-II, (5693) 2-III, (5694) 6-III, (5695) 7-III, (5696) 14-III, (5697) 20-III, (5698) 27-III, (5699) 27-III, (56100) 29-III, (56101) 4-IV, (56102) 19-IV, (56103) 27-IV, (56104) 3-V, (56105) 4-V, (56106) 6-V, (56107) 16-V, (56108) 28-V, (56109) 1-VI.

Disposition of type material.—The Department of Tropical Research, New York Zoological Society, will retain four paratypes, Catalog Nos. 5662, 5669, 5699 and 56108. Paratypes with Catalog Nos. 5683 and 56106 are in the British Museum (Natural History) collections and paratypes with Catalog Nos. 5682 and 56109 are in the United States National Museum collections. The holotype, allotype and remaining paratypes are in the American Museum of Natural History, New York.

Calonotos tripunctatus Druce
(Pl. III, fig. 33)

Calonotos tripunctatus Druce, 1898: 401.

Calonotos tripunctatus, Hampson, 1898: 335 (in part), pl. XII, fig. 7.

Calonotus tripunctatus, Draudt in Seitz, 1915: 109, fig. 18a.

Calonotus tripunctatus, Kaye & Lamont, 1927: 7.

Superficially similar to *craneae* but may be easily separated by the dorsal green band in *tripunctatus* running to the thorax and no white points on either side of this line on the basal segment of the abdomen.

Kaye & Lamont synonymized *chalcipleurus* Hampson under *tripunctatus,* and while I have not seen *chalcipleurus,* it appears to be a valid species. First of all the basal abdominal segment of *chalcipleurus* is black-brown as in *craneae* and *tiburtus* and does not have the dorsal silvery blue that is present on *tripunctatus.* A pair of subdorsal white spots above the bullae on the basal abdominal segment of *chalcipleurus* which is absent in *tripunctatus.* The thorax and legs of *tripunctatus* are black-brown, whereas in *chalcipleurus* the legs and thorax are spotted white with the dorsum of the thorax with metallic green spots. The type locality of *chalcipleurus* is Aroa, Venezuela.

Male genitalia with large flat lobes on base of uncus. Uncus curved ventrally with distal end inflated but with acuminate terminus. Harpe with ventral process long and slender and dorsal process with a broad ventral spine near bifurcation of dorsal and ventral harpal processes and a long finger-like process directed caudally at approximately the mid-point. Terminus of the dorsal process blunt. Scoup (juxta ?) with a single small spine at caudal end and directed laterally. Caudal end of aedeagus with long process at one side.

One female collected on May 14 with a Catalog Number 5491 is provisionally placed in this species. It has only one white spot on the forewing but otherwise appears identical.

Material.—Twenty-one specimens (7 males and 14 females).

Range.—Holotype from Trinidad. Reported from St. Vincent and Venezuela.

EXPLANATION OF THE PLATES

Plate I

Fig. 1. *Pseudosphex kenedyae,* dorsolateral view of male genitalia.
Fig. 2. *Pheia beebei,* lateral view of male genitalia.
Fig. 3. *Saurita arimensis,* dorsal view of male genitalia.
Fig. 4. *Macrocneme spinivalva,* dorsal view of male genitalia.
Fig. 5. *Calonotos craneae,* lateral view of male genitalia.

Plate II

Fig. 1. *Pseudosphex kenedyae,* new species. Holotype.
Fig. 2. *Pheia beebei,* new species. Holotype.
Fig. 3. *Saurita arimensis,* new species. Holotype.
Fig. 4. *Macrocneme spinivalva,* new species. Holotype.
Fig. 5. *Calonotos craneae,* new species. Holotype.

Plate III

The following figures are of species collected at Simla, Arima Valley, Trinidad, except for *Cosmosoma achemon* collected at St. Augustine, Trinidad.

Fig. 1. *Pleurosoma trinitatis* ♀.
Fig. 2. *Sphecops aurantiipes* ♂.
Fig. 3. *Phoenicoprocta vacillans* (*nigropeltata*) ♂.
Fig. 4. *Phoenicoprocta vacillans* ♀.
Fig. 5. *Pheonicoprocta vacillans* ♀.
Fig. 6. *Loxophlebia bisigna* ♂.
Fig. 7. *Loxophlebia postflavia* ♂.
Fig. 8. *Mesothen endoleuca* ♂.
Fig. 9. *Mesothen pyrrha* ♂.
Fig. 10. *Chrostosoma viridipunctatum* ♂.
Fig. 11. *Cosmosoma rubriscapulae* ♀.
Fig. 12. *Cosmosoma subflamma subflamma* ♂.
Fig. 13. *Cosmosoma melathoracia* ♂.
Fig. 14. *Cosmosoma anoxanthia* ♂.
Fig. 15. *Cosmosoma achemon* ♂.
Fig. 16. *Cosmosoma klagesi* ♂.
Fig. 17. *Dixophlebia holophaea* ♂.
Fig. 18. *Pseudomya melanthus* ♂.
Fig. 19. *Pseudomya melanthus* ♀.
Fig. 20. *Rhynchopyga flavicollis* ♂.
Fig. 21. *Saurita cassandra* ♂.
Fig. 22. *Saurita clusia* ♂.
Fig. 23. *Saurita clusia* ♀.
Fig. 24. *Saurita afflicta* ♂.
Fig. 25. *Saurita afflicta* ♀.
Fig. 26. *Dycladia basimacula* ♂.
Fig. 27. *Histiaea meldolae* ♂.
Fig. 28. *Histiaea cepheus* ♂.
Fig. 29. *Macrocneme plumbea* ♂.
Fig. 30. *Macrocneme vittata* ♂.
Fig. 31. *Macrocneme thyra intacta* ♂.
Fig. 32. *Calonotos tiburtus* ♀.
Fig. 33. *Calonotos tripunctatus* ♂.

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

THE CTENUCHIDAE (MOTHS) OF TRINIDAD, B.W.I.
PART I. EUCHROMIINAE

FIG. 1

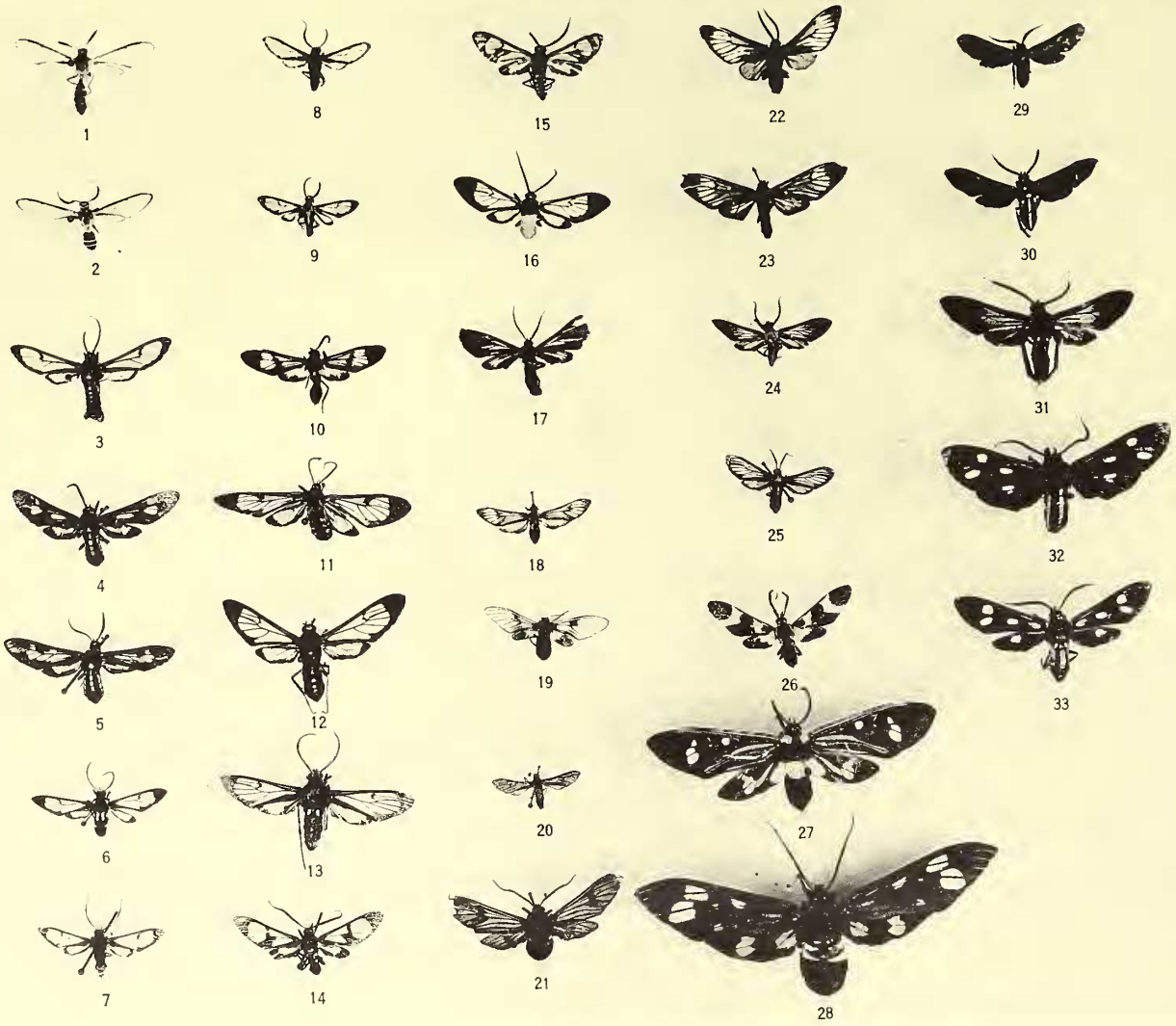
FIG. 2

FIG. 3

FIG. 4

FIG. 5

THE CTENUCHIDAE (MOTHS) OF TRINIDAD, B.W.I.
PART I. EUCHROMIINAE



THE CTENUCHIDAE (MOTHS) OF TRINIDAD, B.W.I.
PART I. EUCHROMIINAE